Ms. Heesu Park California Regional Water Quality Control Board, Los Angeles Region (4) 320 West 4th Street, Suite 200 Los Angeles, California 90013

Subject: TRANSMITTAL OF SITE ASSESSMENT REPORT FOR

EXXONMOBIL OIL CORPORATION SERVICE STATION #18-MF0 15757 PARAMOUNT BOULEVARD, PARAMOUNT, CALIFORNIA

Dear Ms. Park:

Please find enclosed a copy of the site assessment report dated April 14, 2005, for the above-referenced site. This report has been prepared in accordance with the CRWQCB-LAR letter dated November 16, 2004, by Holguin, Fahan & Associates, Inc. (HFA), under the direction of ExxonMobil Oil Corporation.

If you have any questions or require additional information, please contact Mr. James Anderson of HFA at (805) 585-6371, or the undersigned at (310) 212-2904.

Sincerely,

Jenee Briggs Project Manager

ExxonMobil Oil Corporation

Gener H. Buggo



April 14, 2005

Ms. Heesu Park California Regional Water Quality Control Board, Los Angeles Region (4) 320 West 4th Street, Suite 200 Los Angeles, California 90013

Subject: TRANSMITTAL OF SITE ASSESSMENT REPORT FOR

EXXONMOBIL OIL CORPORATION SERVICE STATION #18-MF0 15757 PARAMOUNT BOULEVARD, PARAMOUNT, CALIFORNIA

Dear Ms. Park:

On behalf of ExxonMobil Oil Corporation (ExxonMobil), Holguin, Fahan & Associates, Inc. (HFA) transmits a copy of HFA's site assessment report for the above-referenced site.

Holguin, Fahan & Associates, Inc. trusts that this information meets your requirements. If you have any questions or require additional information, please contact Mr. James Anderson of HFA at (805) 585-6371, or James Anderson@hfa.com

Respectfully submitted,

James Anderson, REA Associate Engineer

Holguin, Fahan & Associates, Inc.

JDA:kdh:dm:mrf:nd

cc: Ms. Jenee Briggs, ExxonMobil

Mark R. Fahan RG, REA

Vice President

Holguin, Fahan & Associates, Inc.





#### SITE ASSESSMENT REPORT

EXXONMOBIL OIL CORPORATION FORMER SERVICE STATION #18-MF0 15757 PARAMOUNT BOULEVARD PARAMOUNT, CALIFORNIA

**APRIL 14, 2005** 

Client: ExxonMobil Oil Corporation

3700 West 190th Street, TPT #2 Torrance, California 90504

Contact: Ms. Jenee Briggs

(310) 212-2904

Consultant: Holguin, Fahan & Associates, Inc.

143 South Figueroa Street Ventura, California 93001

Project Manager: James Anderson, REA

(805) 585-6371

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James Anderson, REA Associate Engineer

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Mark R. Fahan, RG, REA

Vice President

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# **APPENDICES**

- Regulatory Correspondence
- 2 Logs of Exploratory Borings
- **Encroachment Permit**
- Soil Boring, Direct-Push Sampling, and Well Construction 4 Procedures
- 5 Laboratory Reports
- Well Installation Permit 6
- 7 Waste Manifests - PENDING



#### LIST OF ACRONYMS

AB2886 California State Assembly Bill 2886

BTEX benzene, toluene, ethylbenzene, and total xylenes

CDWR California Department of Water Resources

CRWQCB-LAR California Regional Water Quality Control Board, Los Angeles Region (4)

DIPE diisopropyl ether

DOT Department of Transportation
EPA Environmental Protection Agency

ETBE ethyl tertiary butyl ether fbg feet below grade

ft-TOC feet below top of casing

ID identification

J estimated value less than reporting limit and greater than method

detection limit

LACDHS Los Angeles County Department of Health Services LACDPW Los Angeles County Department of Public Works

mg/kg milligrams per kilogram

MSL mean sea level

MTBE methyl tertiary butyl ether

N/A not applicable

ND not detected at a concentration above the reporting limit

No. number

OD outer diameter

PSH phase-separated hydrocarbons

PVC polyvinyl chloride

SB989 California State Senate Bill 989
TAME tertiary-amyl methyl ether
TBA tertiary-butyl alcohol

TPH total petroleum hydrocarbons
USGS United States Geological Survey
UST underground storage tank
VOA volatile organic analysis

µg/I micrograms per liter

end of the reporting limit indicated at the reporting limit indicated.



#### INTRODUCTION

Holguin, Fahan & Associates, Inc. (HFA) was contracted by ExxonMobil Oil Corporation (ExxonMobil) to perform a site assessment at ExxonMobil Former Service Station #18-MFO, located at 15757 Paramount Boulevard, Paramount, California (see Figure 1 - Site Location Map). The assessment was performed to further investigate the crossgradient and downgradient extents of dissolved-phase MTBE. The site assessment was conducted in accordance with HFA's work plan for additional site assessment activities dated August 25, 2004, which was approved by the CRWQCB-LAR in its letter dated November 16, 2004 (see Appendix 1 for the regulatory correspondence).

The responsible party contact is Ms. Jenee Briggs, ExxonMobil Oil Corporation, 3700 West 190th Street, TPT #2, Torrance, California 90504, (310) 212-2904. The environmental consultant contact is Mr. James Anderson, Holguin, Fahan & Associates, Inc., 143 South Figueroa Street, Ventura, California, 93001, (805) 585-6371. The regulatory agency contact is Ms. Heesu Park, California Regional Water Quality Control Board, Los Angeles Region (4), 320 West 4th Street, Suite 200, Los Angeles, California, 90013, (213) 576-6705.



#### BACKGROUND

#### SITE DESCRIPTION

ExxonMobil Former Service Station #18-MF0 is located at 15757 Paramount Boulevard, on the northwestern corner of the intersection of Alondra Boulevard and Paramount Boulevard, in the city of Paramount, California (see Figure 1). The surrounding areas consist of light commercial and residential properties. An ARCO brand service station is located across the intersection to the southeast (see Figure 2 - Site Vicinity Map). The subject site was divested by ExxonMobil in June 2002, and is currently an active Fuel for Less brand gasoline station, which includes three 10,000-gallon gasoline USTs; one 10,000-gallon diesel UST; three dispenser islands; associated product and vent piping; a station building; and a car wash (see Figure 3 - Plot Plan for the facility locations).

#### SITE HYDROGEOLOGY

The site is located at an elevation of 70 feet above MSL, and the local topography slopes toward the south (USGS, 1967). The site lies in the Downey Plain portion of the Central Basin Pressure Area of the Los Angeles Coastal Plain (CDWR, 1961). Surface waters in the site vicinity drain as part of the watershed of the Lower Los Angeles River (CRWQCB-LAR, 1994). The nearest bodies of surface water are the Los Angeles River, located 1.5 miles to the west, and the San Gabriel River, located 2 miles to the east (USGS, 1967).

Near surface soil in the site vicinity consists of an estimated 150 feet of Recent alluvium, deposited by the Los Angeles and San Gabriel Rivers. Within the alluvium occurs the Bellflower Aquiclude, estimated to be 110 feet thick, the Semi-Perched Aquifer in the more permeable regions of the Aquiclude, and the regional Gaspur Aquifer, the top of which occurs at approximately 120 fbg (CDWR, 1961). Assessment activities indicate that the alluvium beneath the site consists of sand from the surface to 15 fbg, clayey silt and silt from 15 to 30 fbg, and silty sand and sandy silt from 30 to 50 fbg, the maximum depth investigated (see Appendix 2 for the logs of exploratory borings) (HFA, 2003).

The site is located in the Central Groundwater Basin of the Los Angeles-San Gabriel Hydrographic Unit. According to the CRWQCB-LAR, groundwater within the basin has existing beneficial use for municipal, industrial, and agricultural purposes (CRWQCB-LAR, 1994). During the first quarter 2005 groundwater monitoring event performed on February 25, 2005, the depth to groundwater in the wells ranged from 18.05 to 20.30 ft-TOC, and the groundwater flow direction was to the northwest with a horizontal gradient of 0.002 (see Figure 4 - Groundwater Elevation Contour Map for First Quarter 2005) (HFA, 2005). First groundwater is interpreted to be within the Semi-Perched Aquifer of the Bellflower Aquiclude (CDWR, 1961).



Based on information provided by the LACDPW Hydrologic Records Section, six groundwater production wells were identified within 1 mile of the site (LACDPW, 2002).

WELL #	DISTANCE FROM SITE	USE	OWNER	TOTAL DEPTH (fbg)
942H	3,700 feet southeast	Irrigation Supply (Private)	George Yamamoto	147
932E	4,500 feet south-southwest	Industrial Supply	Ohio Rubber Company	222
920A	5,000 feet northwest	Irrigation Supply (Private)	Sal Gutierrez	150
921D	1 mile west	Municipal Supply	City of Signal Hill	405
921N	1 mile west	Municipal Supply	City of Signal Hill	950
922E	1 mile southwest	Industrial Supply	Southern California Edison	676

#### **PREVIOUS WORK**

In 1987, the first generation of gasoline USTs was removed, and residual adsorbed-phase hydrocarbons were detected beneath the former USTs and the southern dispenser island (see Figure 3)(Alton Geoscience [Alton], 1993).

In 1990, the second generation of gasoline USTs was removed, and an unknown volume of soil was excavated from the northeastern portion of the former UST cavity (see Figure 3)(Alton, 1993).

Multiple phases of assessment and quarterly groundwater monitoring were conducted from 1992 to 1996. These activities indicated that residual adsorbed-phase hydrocarbons, and



dissolved-phase benzene and MTBE were localized to the vicinity of the two former UST cavities (see Figure 3) (Alton, 1993; TRAK Environmental Group, 1996).

The site was granted closure by the CRWQCB-LAR in 1996 and all wells were abandoned.

In July 2003, an SB989 facility upgrade was performed by the current owner of the fueling facilities. Laboratory analytical results for the compliance soil samples collected from beneath the dispensers and product piping at 4 fbg indicated no detections of TPH as gasoline, benzene, or MTBE (A.C.C.E.S, Inc., 2003).

Multiple phases of assessment have been conducted from 2002 to 2004, which include the advancement of four direct-push sampling locations (B-1 through B-4) and the installation of four groundwater monitoring wells (MW-1R through MW-4R). Results of the assessment indicated TPH as gasoline, benzene and MTBE concentrations up to 5.0, 0.0049, and 5.9 mg/kg, respectively, with adsorbed-phase MTBE localized to the vicinity of the current USTs in the capillary fringe and upper saturated zones (20 to 25 fbg) (see Figure 5 - Adsorbed-Phase Hydrocarbon Concentrations, and Table 1 - Summary of Soil Sample Analytical Results) (HFA, 2002; HFA, 2003).

Quarterly groundwater monitoring has been performed at the site since the fourth quarter of 2003. PSH has never been detected. Dissolved-phase benzene and TPH as diesel have not been detected for any of the monitoring wells. Dissolved-phase TPH as gasoline, MTBE, and TBA concentrations are localized to the wells in the vicinity of the current USTs, with the maximum concentrations consistently measured for the well located directly downgradient (well MW-4R) (see Figure 6 - Benzene Concentrations in Groundwater for First Quarter 2005, Figure 7 - MTBE/TBA Concentrations in Groundwater for First Quarter 2005, and Table 2 - Summary of Groundwater Sample Analytical Results) (HFA, 2005).



#### SITE EVALUATION METHODS AND RESULTS

#### ASSESSMENT STRATEGY

Groundwater monitoring wells MW-5 and MW-7 were installed off-site to delineate the downgradient extent of dissolved-phase MTBE, and well MW-6 was installed on-site, south of the current USTs, to further investigate the crossgradient extent of dissolved-phase MTBE (see Figure 3).

#### **PRE-FIELD ACTIVITIES**

A geophysical survey was conducted to identify substructures in the vicinity of the proposed drilling locations. Underground Service Alert of Southern California was notified at least 48 hours prior to conducting the work. The drilling locations were cleared to 8 fbg using an air knife and vacuum rig in accordance with ExxonMobil protocols. An encroachment permit was obtained from the County of Los Angeles for well MW-7, installed in the alley to the west of the site (see Appendix 3 for a copy of the permit).

#### SOIL CHARACTERIZATION AND SAMPLING RESULTS

On February 15 and 16, 2005, HFA installed three groundwater monitoring wells (MW-5 through MW-7) using a hollow-stem auger rig (see Figure 3 for the well locations, and Appendix 4 for the procedures). Groundwater monitoring wells MW-5 through MW-7 were drilled to 40 fbg, approximately 20 feet below the historical stabilized groundwater level.

Soil samples were collected at 5-foot intervals for geologic logging to the total depth of wells MW-5 through MW-7 (see Appendix 2). The subsurface soils encountered during this investigation consisted of interbedded layers of sand, silty sand, and silt from the surface to 40 fbg, the maximum depth investigated (see Appendix 2). Groundwater was encountered at 19.5 fbg during the drilling operations.

Selected soil samples were collected using methanol preserved VOAs in accordance with EPA Method 5035 and submitted to TestAmerica Analytical Testing Corporation (TestAmerica), a California State certified hazardous material testing laboratory. The samples were analyzed for TPH as gasoline using EPA Method 8015B and for BTEX, MTBE, TBA, TAME, DIPE, ETBE, and ethanol using EPA Method 8260B. The analytical data will be electronically reported to the GeoTracker information system in accordance with AB2886 requirements.

Laboratory analytical results for the soil samples collected from wells MW-5 through MW-7 indicated maximum benzene and MTBE concentrations of 0.0009J and 0.0830 mg/kg,



respectively, and no detections of TPH as gasoline (see Table 1, and Appendix 5 for the laboratory reports).

### **GROUNDWATER CHARACTERIZATION AND SAMPLING RESULTS**

Groundwater monitoring wells MW-5 through MW-7 were completed with 4-inch-OD PVC casings, and screened from 10 to 40 fbg (see Appendix 2 for the well construction details, and Appendix 4 for the procedures). The wells were developed by surging to settle the gravel packs. A well installation permit was obtained from the LACDHS (see Appendix 6 for the well installation permit). The wells were surveyed in accordance with AB2886 requirements.

The first quarter 2005 groundwater monitoring event was conducted on February 25, 2005. The depth to groundwater in the wells ranged from 18.05 to 20.30 ft-TOC, and the groundwater flow direction was to the northwest with a gradient of 0.002 (see Figure 4 and Table 2) (HFA, 2005).

The groundwater samples were submitted to TestAmerica, where they were analyzed for TPH as gasoline using EPA Method 8015B and for BTEX, MTBE, TBA, TAME, DIPE, ETBE, and ethanol using EPA Method 8260B. Laboratory analytical results for the groundwater samples collected from wells MW-1 through MW-7 indicated TPH as gasoline, MTBE, and TBA concentrations up to 34,000; 41,800 and 23,100  $\mu$ g/I, respectively, and no detections of benzene. The maximum concentrations were detected for wells MW-4R and MW-6, located adjacent to the current USTs (see Figure 6, Figure 7, and Table 2) (HFA, 2005).

## **WASTE MANAGEMENT**

Soil cuttings and decontamination water were temporarily stored on-site in 55-gallon DOT-approved drums, pending receipt of laboratory analytical results. The soil and groundwater wastes were transported off-site by Philip Services Corporation (PSC Industrial Outsourcing Group) for recycling at TPS Technologies and Crosby & Overton, respectively (see Appendix 7 for the waste manifests - PENDING).



#### **SUMMARY AND CONCLUSIONS**

Soil beneath the site consists of Recent alluvium composed of sand from the surface to 15 fbg, clayey silt and silt from 15 to 30 fbg, and silty sand and sandy silt from 30 to 50 fbg, the maximum depth investigated. First groundwater occurs at an average depth of 19.5 fbg and is interpreted to be within the Semi-Perched Aquifer of the Bellflower Aquiclude.

A review of sensitive receptors identified six groundwater production wells within 1 mile of the site, the closest of which is located 3,700 feet to the southeast.

Results of the current assessment indicated maximum benzene and MTBE concentrations of 0.0009J and 0.0830 mg/kg, respectively, and no detections of TPH as gasoline. Assessment activities have only indicated trace concentrations of adsorbed-phase TPH as gasoline and BTEX hydrocarbons, and that MTBE is localized to the vicinity of the current USTs in the capillary fringe and upper saturated zones

During the first quarter 2005 groundwater monitoring event, the groundwater flow direction was to the northwest with a gradient of 0.002. TPH as gasoline, MTBE, and TBA were measured at maximum concentrations of 34,000; 41,800 and 23,100  $\mu$ g/l, respectively. The highest dissolved-phase hydrocarbon concentrations were measured for the wells located adjacent to the current USTs.



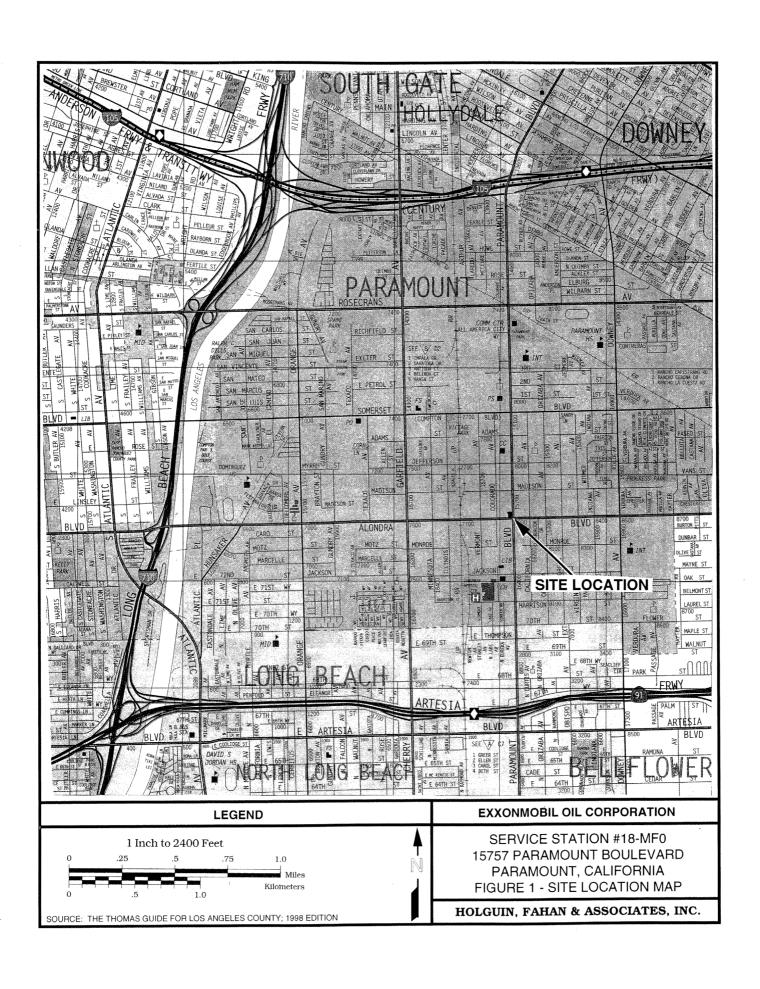
#### **REFERENCES**

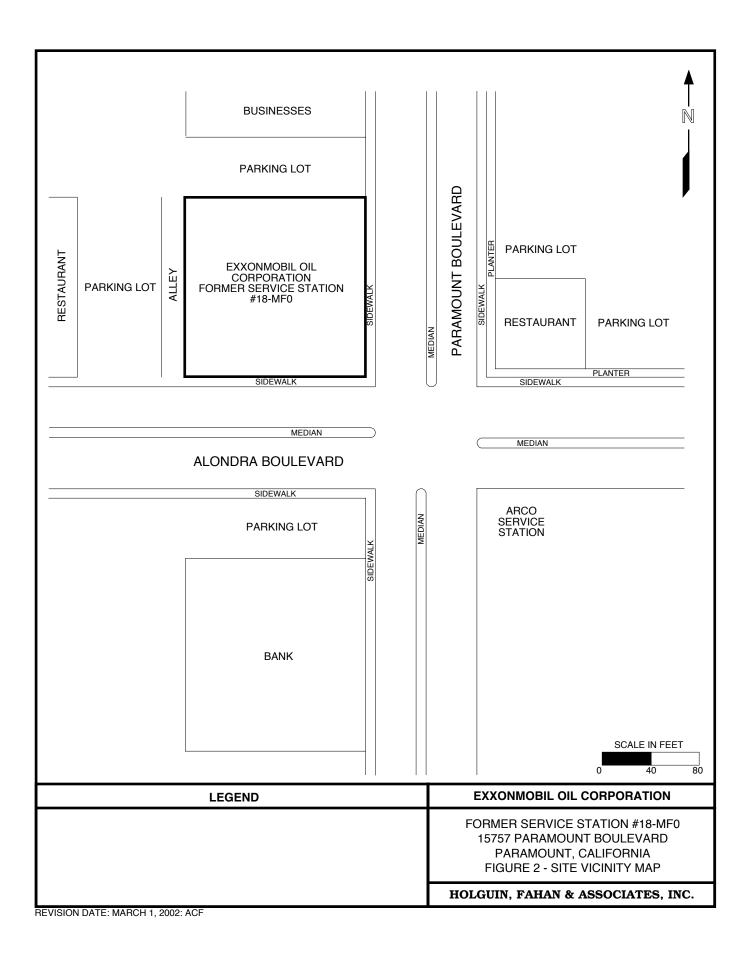
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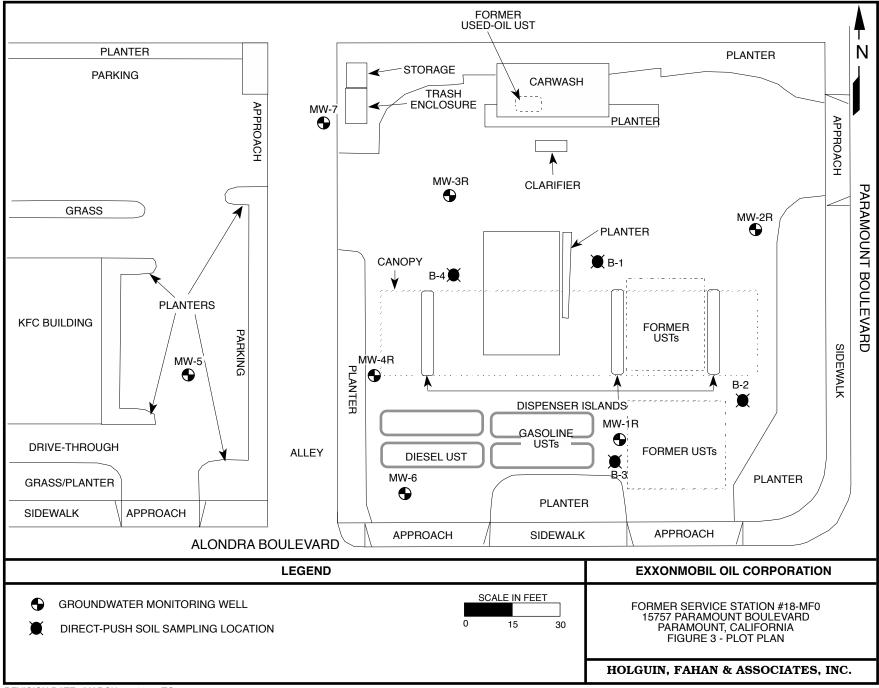
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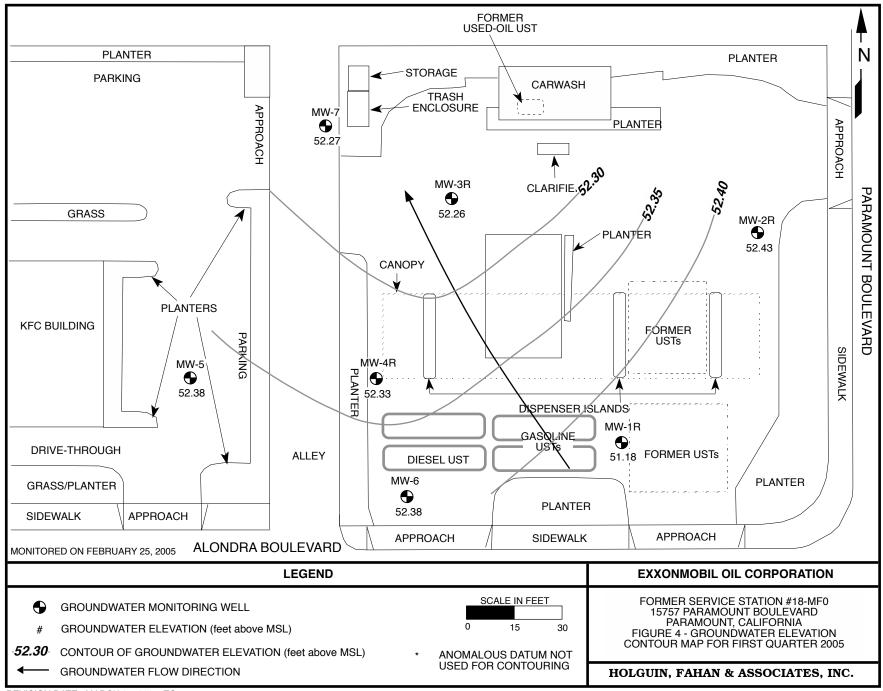


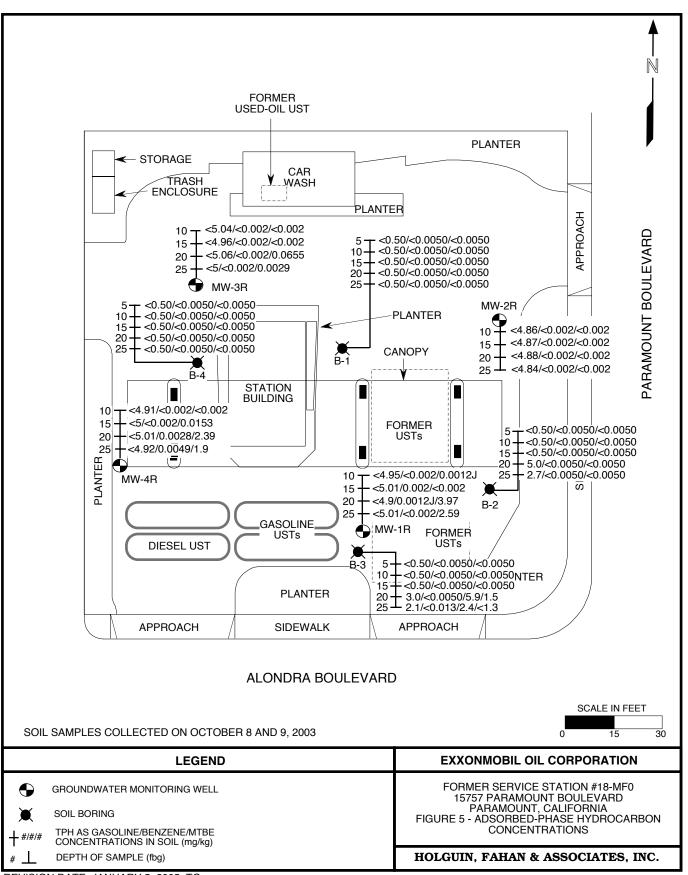
**FIGURES** 

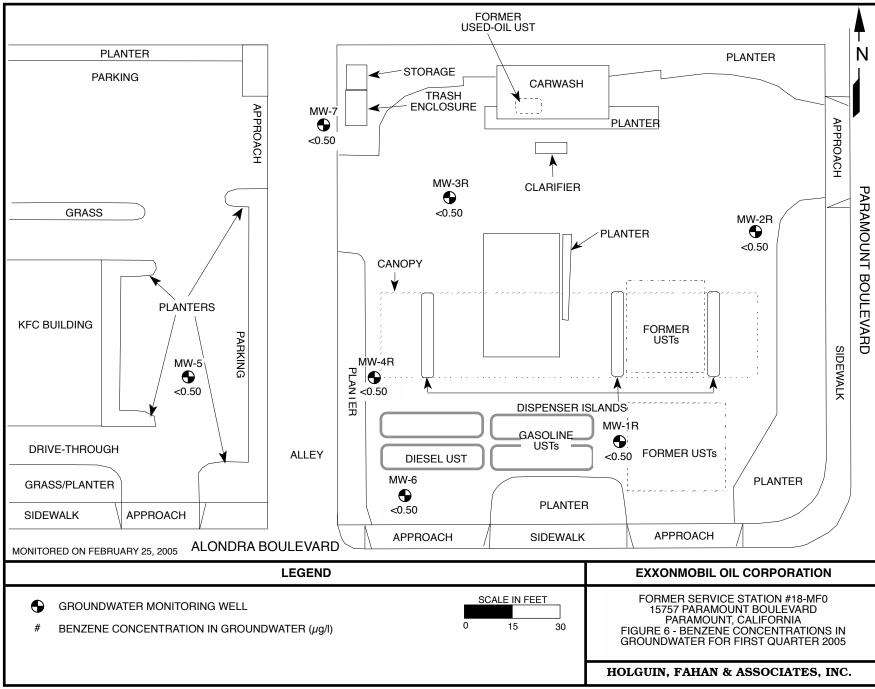


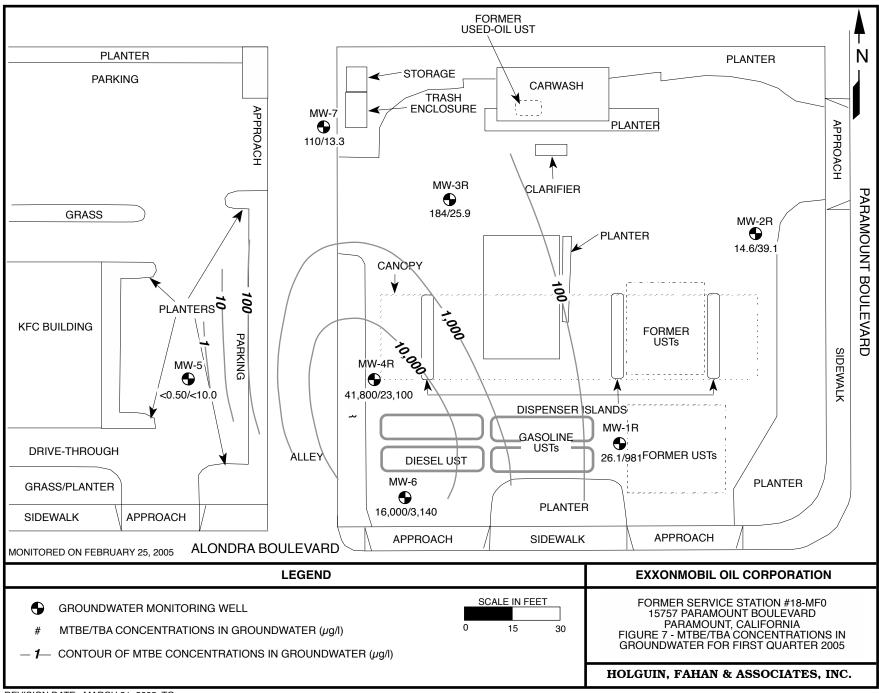














**TABLES** 

TABLE 1
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS
EXXONMOBIL OIL CORPORATION FORMER SERVICE STATION #18-MF0, PARAMOUNT, CALIFORNIA

SAMPLE	DATE		SAMPLE	TPH AS			ETHYL-	TOTAL								
SOURCE	SAMPLED	DEPTH	ID	GASOLINE	BENZENE	TOLUENE	BENZENE	XYLENES	MTBE	TBA	DIPE	ETBE	TAME	ETHANOL		REF
		(fbg)		(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	
EPA	ANALYTIC	AL METH	HOD	8015 (M) / 8015B				8260	В						6010B	N/A
B-1	3-5-02	5	B-1-5	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.05	<0.01	<0.01	<0.01			Α
	3-5-02	10	B-1-10	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.05	<0.01	<0.01	<0.01			Α
	3-5-02	15	B-1-15	<0.50	<0.0050	<0.0050	<0.0050	0.0066	<0.0050	<0.05	<0.01	<0.01	<0.01			Α
	3-5-02	20	B-1-20	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.05	<0.01	<0.01	<0.01		5.60	Α
	3-5-02	25	B-1-25	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.05	<0.01	<0.01	<0.01			Α
B-2	3-5-02	5	B-2-5	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.05	<0.01	<0.01	<0.01			Α
	3-5-02	10	B-2-10	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.05	<0.01	<0.01	<0.01			Α
	3-5-02	15	B-2-15	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.05	<0.01	<0.01	<0.01			Α
	3-5-02	20	B-2-20	5.0	<0.0050	<0.0050	0.064	0.23	<0.0050	<0.05	<0.01	<0.01	<0.01			Α
	3-5-02	25	B-2-25	2.7	<0.0050	<0.0050	0.0093	0.036	<0.0050	<0.05	<0.01	<0.01	<0.01		4.76	Α
B-3	3-5-02	5	B-3-5	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.05	<0.01	<0.01	<0.01			Α
	3-5-02	10	B-3-10	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.05	<0.01	<0.01	<0.01			Α
	3-5-02	15	B-3-15	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.05	<0.01	<0.01	<0.01			Α
	3-5-02	20	B-3-20	3.0	<0.0050	<0.0050	<0.0050	<0.0050	5.9	1.5	<0.01	<0.01	<0.01		9.08	Α
	3-5-02	25	B-3-25	2.1	<0.013	<0.013	<0.013	<0.013	2.4	<1.3	<0.25	<0.25	<0.25			Α
B-4	3-11-02	5	B-4-5	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.05	<0.01	<0.01	<0.01			Α
	3-11-02	10	B-4-10	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.05	<0.01	<0.01	<0.01			Α
	3-11-02	15	B-4-15	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.05	<0.01	<0.01	<0.01			Α
	3-11-02	20	B-4-20	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.05	<0.01	<0.01	<0.01			Α
	3-11-02	25	B-4-25	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.05	<0.01	<0.01	<0.01			Α
MW-1R	10-9-03	10	MW-1R-10	<4.95	< 0.002	0.0013J	<0.002	0.0067	0.0012J	<0.0497	<0.0099	<0.002	<0.002			В
	10-9-03	15	MW-1R-15	<5.01	0.002	0.0015J	<0.002	<0.002	<0.002	<0.0502	<0.01	<0.002	<0.002			В
	10-9-03	20	MW-1R-20	<4.9	0.0012J	0.0011J	<0.002	<0.002	3.97	0.695	<0.0101	<0.002	0.0024			В
	10-9-03	25	MW-1R-25	<5.01	< 0.002	<0.002	<0.002	<0.002	2.59	0.834	<0.01	<0.002	<0.002			В
MW-2R	10-9-03	10	MW-2R-10	<4.86	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0503	<0.0101	<0.002	<0.002			В
	10-9-03	15	MW-2R-15	<4.87	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0505	<0.0101	<0.002	<0.002			В
	10-9-03	20	MW-2R-20	<4.88	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0502	<0.01	<0.002	<0.002			В
	10-9-03	25	MW-2R-25	<4.84	<0.002	0.0009J	<0.002	<0.002	<0.002	<0.0498	<0.01	<0.002	<0.002			В
MW-3R	10-8-03	10	MW-3R-10	<5.04	<0.002	0.0108	0.002	0.0122		<0.0499	<0.01	<0.002	<0.002			В
	10-8-03	15	MW-3R-15	<4.96	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0499	<0.01	<0.002	<0.002			В
	10-8-03	20	MW-3R-20	<5.06	<0.002	<0.002	<0.002	<0.002	0.0655	0.08	<0.01	<0.002	<0.002			В
	10-8-03	25	MW-3R-25	<5	<0.002	<0.002	<0.002	<0.002	0.0029	<0.0499	<0.01	<0.002	<0.002			В

TABLE 1
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS
EXXONMOBIL OIL CORPORATION FORMER SERVICE STATION #18-MF0, PARAMOUNT, CALIFORNIA

SAMPLE	DATE		SAMPLE	TPH AS			ETHYL-	TOTAL								
SOURCE	SAMPLED	DEPTH	ID	GASOLINE	BENZENE	TOLUENE	BENZENE	XYLENES	MTBE	TBA	DIPE	ETBE	TAME	ETHANOL	LEAD	REF
		(fbg)		(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	
EPA	ANALYTIC	AL METH	HOD	8015 (M) / 8015B				8260	В						6010B	N/A
MW-4R	10-8-03	10	MW-4R-10	<4.91	<0.002	<0.002	< 0.002	<0.002	<0.002	<0.0501	<0.01	<0.002	<0.002			В
	10-8-03	15	MW-4R-15	<5	<0.002	0.0021	<0.002	0.0056	0.0153	<0.0505	<0.0101	<0.002	<0.002		-	В
	10-8-03	20	MW-4R-20	<5.01	0.0028	< 0.002	< 0.002	< 0.002	2.39	0.442	<0.0101	<0.002	<0.002			В
	10-8-03	25	MW-4R-25	<4.92	0.0049	0.0067	<0.002	0.0023	1.9	0.661	<0.0101	<0.002	<0.002			В
MW-5	2-15-05	10	MW-5-10	<6.44	<0.0023	<0.0023	<0.0023	<0.0023	<0.0023	<0.0583	<0.0023	<0.0023	<0.0023	<0.233		С
	2-15-05	15	MW-5-15	<6.39	<0.0023	0.0016J	<0.0023	0.0036	<0.0023	<0.0568	<0.0023	<0.0023	<0.0023	<0.227		С
	2-15-05	20	MW-5-20	<15.3	<0.0021	0.0015J	<0.0021	<0.0021	<0.0021	< 0.0534	<0.0021	<0.0021	<0.0021	<0.214		С
MW-6	2-15-05	10	MW-6-10	<6.27	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0644	<0.0026	<0.0026	<0.0026	<0.258		С
	2-15-05	15	MW-6-15	<4.24	<0.0017	0.0019	<0.0017	<0.0017	0.0027	<0.0435	<0.0017	<0.0017	<0.0017	<0.174		С
	2-15-05	20	MW-6-20	<4.19	<0.0019	0.0023	<0.0019	<0.0019	0.0830	<0.0470	<0.0019	<0.0019	<0.0019	<0.188		С
MW-7	2-16-05	10	MW-7-10	<5.69	<0.0023	<0.0023	<0.0023	<0.0023	<0.0023	< 0.0563	<0.0023	<0.0023	<0.0023	<0.225		С
	2-16-05	15	MW-7-15	<4.98	0.0009J	0.0023	<0.0017	<0.0017	<0.0017	<0.0437	<0.0017	<0.0017	<0.0017	<0.175		С
	2-16-05	20	MW-7-20	<4.24	<0.0016	0.0014J	<0.0016	<0.0016	<0.0016	<0.0412	<0.0016	<0.0016	<0.0016	<0.165		С

<sup>-- =</sup> not analyzed. <# = not detected at reporting limit indicated.

A = Holguin, Fahan & Associates, Inc.'s (HFA's) report dated April 9, 2002.

B = HFA's report dated December 1, 2003.

C = HFA's current report.

# TABLE 2 SUMMARY OF GROUNDWATER SAMPLE ANALYTICAL RESULTS EXXONMOBIL OIL CORPORATION FORMER SERVICE STATION: 18-MF0

Date Measured	Notes	Well Elevation (feet-MSL) (TOC)	Depth To Ground Water(ft-TOC)	PSH Thickness (feet)	Ground Water Elevation (feet-MSL)	TPH AS GAS (µg/l)	TPH AS DIESEL (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl- benzene (µg/l)	(μg/l)	MTBE 8020-8021 (μg/l)	MTBE 8260 (µg/l)	TBA (µg/l)	DIPE (μg/l)	ETBE (μg/l)	TAME (μg/l)	Ethanol (µg/l)	Methanol (µg/l)	EDB (µg/l)	EDC (µg/l)	Lead (μg/l)
			YTICAL METHO							D LABOR												
		MINIMUM E	DETECTION LI	MIT			REI	ER TO A	TTACHE	D LABORA	ATORY RE	PORTS F	OR THE C	URRENT	QUARTE	R						
MW-1R SCREEN INT	ΓFRVAI (fl	na): 15 to 45																				
10-24-2003		71.48	19.52	0	51.96	4,670		<0.50	<0.50	<0.50	<0.50		9,850	603	<0.50	<0.50	8.10					-
01-20-2004		71.48	20.25	0	51.23	2,810		<0.50	<0.50	<0.50	<0.50		3,890	147	<0.50	<0.50	3.60	<100				-
04-22-2004		71.48	20.11	0	51.37	615	<50	<0.50	<0.50	<0.50	<0.50		2,440	1,720	<0.50	<0.50	1.40	<100				<u> </u>
08-04-2004		71.48	21.60	0	49.88	872		<0.50	<0.50	<0.50	<0.50		925	3,850	<0.50	<0.50	0.70	<100				<del>-</del>
11-04-2004		71.48	21.79	0	49.69	117		<0.50	<0.50	<0.50	<0.50		116	6,720	<0.50	<0.50	<0.50	<100				
02-25-2005		71.48	20.30	0	51.18	<50.0		<0.50	<0.50	<0.50	<0.50		26.1	981	<0.50	<0.50	<0.50	<100				<del>-</del>
MW-2R SCREEN INT	ΓERVAL (ft	og): 15 to 45		l										1								
10-24-2003		71.48	19.67	0	51.81	<50.0		<0.50	<0.50	<0.50	<0.50		4.50	<10.0	<0.50	<0.50	<0.50					-
01-20-2004		71.48	20.26	0	51.22	<50.0		<0.50	<0.50	<0.50	<0.50		0.60	<10.0	<0.50	<0.50	<0.50	<100				-
04-22-2004		71.48	20.10	0	51.38	<50.0	<50	<0.50	<0.50	<0.50	<0.50		30.9	<10.0	<0.50	<0.50	<0.50	<100				-
08-04-2004		71.48	21.63	0	49.85	56.5		<0.50	<0.50	<0.50	<0.50		81.7	7.80J	<0.50	<0.50	<0.50	<100				-
11-04-2004		71.48	21.68	0	49.80	<50.0		<0.50	<0.50	<0.50	<0.50		33.3	<10.0	<0.50	<0.50	<0.50	<100				-
02-25-2005		71.48	19.05	0	52.43	<50.0		<0.50	<0.50	<0.50	<0.50		14.6	39.1	<0.50	<0.50	<0.50	<100				-
MW-3R SCREEN INT	ΓERVAL (ft	og): 20 to 50											·									
10-24-2003		71.55	19.69	0	51.86	<50.0		0.40J	<0.50	<0.50	<0.50		9.70	<10.0	<0.50	<0.50	<0.50					
01-20-2004		71.55	20.43	0	51.12	<50.0		<0.50	<0.50	<0.50	<0.50		12.2	<10.0	<0.50	<0.50	<0.50	<100				
04-22-2004		71.55	20.22	0	51.33	<50.0	<50	<0.50	<0.50	<0.50	<0.50		18.4	<10.0	<0.50	<0.50	<0.50	<100				
08-04-2004		71.55	21.00	0	50.55	54.4		<0.50	<0.50	<0.50	<0.50		66.1	10.5	<0.50	<0.50	<0.50	<100				
11-04-2004		71.55	22.17	0	49.38	113		<0.50	<0.50	<0.50	<0.50		114	<10.0	<0.50	<0.50	<0.50	<100				
02-25-2005		71.55	19.29	0	52.26	150		<0.50	<0.50	<0.50	<0.50		184	25.9	<0.50	<0.50	<0.50	<100				
MW-4R SCREEN INT	ΓERVAL (ft	og): 15 to 45	i																			
10-24-2003		71.60	19.90	0	51.70	5,700		<0.50	<0.50	<0.50	<0.50		17,600	1,160	<0.50	<0.50	5.20					
01-20-2004		71.60	20.45	0	51.15	20,400		<0.50	<0.50	<0.50	<0.50		20,800	2,000	<0.50	<0.50	8.30	<100				
04-22-2004		71.60	20.31	0	51.29	8,100	<50	<0.50	<0.50	<0.50	<0.50		27,600	12,100	<0.50	<0.50	10.6	<100				
08-04-2004		71.60	22.15	0	49.45	31,500		<0.50	<0.50	0.40J	0.80		32,800	10,100	<0.50	0.80	13.1	<100				
11-04-2004		71.60	21.94	0	49.66	36,400		<0.50	<0.50	<0.50	<0.50		36,800	10,600	<0.50	<0.50	12.6	<100				-
02-25-2005		71.60	19.27	0	52.33	34,000		<0.50	<0.50	<0.50	<0.50		41,800	23,100	<0.50	1.10	16.6	<100				
MW-5 SCREEN INT	ΓERVAL (ft	og): 10 to 40	,			'	'	1					,	- 1	•	•	'		•	"		
02-25-2005		71.46	19.08	0	52.38	<50.0		<0.50	<0.50	<0.50	<0.50		<0.50	<10.0	<0.50	<0.50	<0.50	<100				-

# TABLE 2 SUMMARY OF GROUNDWATER SAMPLE ANALYTICAL RESULTS EXXONMOBIL OIL CORPORATION FORMER SERVICE STATION: 18-MF0

Date Measured	Notes	Well Elevation (feet-MSL) (TOC)	Depth To Ground Water(ft-TOC)	PSH Thickness (feet)	Ground Water Elevation (feet-MSL)	TPH AS GAS (µg/l)	TPH AS DIESEL (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl- benzene (µg/l)	Total Xylene (µg/l)	MTBE 8020-8021 (µg/l)	MTBE 8260 (μg/l)	TBA (μg/l)	DIPE (μg/l)	ETBE (µg/l)	TAME (µg/l)	Ethanol (μg/l)	Methanol (μg/l)	EDB (µg/l)	EDC (µg/l)	Lead (µg/l)
	EPA ANALYTICAL METHOD REFER TO ATTACHED LABORATORY REPORTS FOR THE CURRENT QUARTER																					
		MINIMUM E	ETECTION LI	MIT			RE	FER TO A	TTACHE	LABORA	ATORY R	EPORTS F	OR THE	CURRENT	QUARTE	R						
MW-6 SCREEN INTI	ERVAL (fb	g): 10 to 40	ı																			
02-25-2005		71.23	18.85	0	52.38	13,500		<0.50	<0.50	<0.50	<0.50		16,000	3,140	<0.50	<0.50	5.20	<100				
MW-7 SCREEN INTI	ERVAL (fb	g): 10 to 40																				
02-25-2005		70.32	18.05	0	52.27	86.4		<0.50	<0.50	<0.50	<0.50		110	13.3	<0.50	<0.50	<0.50	<100			-	
TRIP BLANK SCREEN INTI	_	og): N/A to N	N/A																			
10-24-2003		N/A	N/A	N/A	N/A	<50.0		<0.50	0.50	<0.50	<0.50		<0.50	<10.0	<0.50	<0.50	<0.50					
01-20-2004		N/A	N/A	N/A	N/A	<50.0		<0.50	0.30J	<0.50	<0.50		<0.50	<10.0	<0.50	<0.50	<0.50	<100				
04-22-2004		N/A	N/A	N/A	N/A	<50.0		<0.50	<0.50	<0.50	<0.50		<0.50	<10.0	<0.50	<0.50	<0.50	<100			-	
08-04-2004		N/A	N/A	N/A	N/A	<50.0		<0.50	<0.50	<0.50	<0.50		<0.50	<10.0	<0.50	<0.50	<0.50	<100				
11-04-2004		N/A	N/A	N/A	N/A	<50.0		<0.50	<0.50	<0.50	<0.50		<0.50	<10.0	<0.50	<0.50	<0.50	<100				
02-25-2005		N/A	N/A	N/A	N/A	<50.0		<0.50	<0.50	<0.50	<0.50		<0.50	<10.0	<0.50	<0.50	<0.50	<100				

ft-TOC = Feet below top of casing. N/A = Not applicable. -- = Not sampled or not analyzed.



# **APPENDICES**



### APPENDIX 1.

# REGULATORY CORRESPONDENCE



Protection

# California Regional Water Quality Control Board

# Los Angeles Region

Over 51 Years Serving Coastal Los Angeles and Ventura Counties
Recipient of the 2001 Environmental Leadership Award from Keep California Beautiful



320 W. 4th Street, Suite 200, Los Angeles, California 90013 Phone (213) 576-6600 FAX (213) 576-6640 Internet Address: http://www.swrcb.ca.gov/rwqcb4

November 16, 2004

Ms. Jenee Briggs ExxonMobil Oil Corporation 3700 West 190<sup>th</sup> Street, TPT2 Torrance. CA 90509

UNDERGROUND TANK PROGRAM – SOIL AND GROUNDWATER INVESTIGATION EXXONMOBIL #18-MFO
15757 PARAMOUNT BOULEVARD, PARAMOUNT (FILE NO. I-06633A)

Dear Ms. Briggs:

Thank you for your submission of the "WORKPLAN FOR ADDITIONAL SITE ASSESSMENT ACTIVITIES" dated August 25, 2004, and "the third Quarter 2004 Groundwater Monitoring and Progress Report" dated September 20, 2004, prepared by your consultant, the Holguin, Fahan & Associates, Inc. We have reviewed the reports and have the following comments:

# I. Site Characterization Workplan

The groundwater monitoring report indicated that petroleum hydrocarbon (up to 31,500 micrograms per liter of TPHg) and methyl tertiary butyl ether [(MTBE) (up to 32,800 micrograms per liter)] were detected in the groundwater. Based on this information, there is no groundwater monitoring well located downgradient from monitoring well MW-4R and the groundwater plume has not been adequately defined. Therefore, the workplan for additional site assessment proposed to install three groundwater monitoring wells to further define the extent of dissolved-phase of petroleum hydrocarbons and MTBE in groundwater. We concur with your workplan, provided you meet the following conditions:

- 1. The construction, development, and abandonment of groundwater monitoring wells must comply with requirements prescribed in the California Well Standards (Bulletin 74-90), published by the California Department of Water Resources (can be seen at <a href="https://www.dpla2.water.ca.gov">www.dpla2.water.ca.gov</a> and go to "groundwater").
- 2. Soil samples shall be collected from on-site boring locations per EPA Method 5035 at a minimum of five-foot intervals and logged.
- 3. All groundwater monitoring wells must be surveyed in to a benchmark of known elevation above mean sea level by a licensed land surveyor or registered civil engineer. Prior to collecting groundwater samples, free product thickness (if present) must be determined and the depth to water must be measured in all wells to be sampled. The wells are to be properly purged until the temperature, conductivity, and pH stabilize, and the water is free of suspended and settleable matter, before samples are collected for analysis. Any wells containing free product must be purged to remove any standing product, allowed to equilibrate to prepurged levels and free product thickness measured and removed.

California Environmental Protection Agency

4. Soil and groundwater samples must be analyzed by Cal-LUFT GC/FID or Cal-LUFT GC/MS Method for total petroleum hydrocarbons as gasoline (TPHG), total petroleum hydrocarbons as diesel (TPHD); and by EPA Method 8260B for BTEX, and fuel oxygenate compounds including methyl tertiary butyl ether (MTBE), di-isopropyl ether (DIPE), ethyl tertiary butyl ether (ETBE), tertiary amyl methyl ether (TAME), and tertiary butyl alcohol (TBA). Ethanol is also required and shall be analyzed by either method above. The analytical detection limits must conform to the Regional Board General Laboratory Testing Requirements (6/00) (<a href="www.waterboards.ca.gov/losangeles/docs/lab req 6-00.doc">www.waterboards.ca.gov/losangeles/docs/lab req 6-00.doc</a>). All respective analytical methods must be certified by the California Environmental Laboratory Accreditation Program (ELAP). All analytical data must be reported by a California-certified laboratory.

# II. General Requirements

- 1. All necessary permits must be obtained from the appropriate agencies prior to the start of work.
- 2. All reports must conform to the "Guidelines for Report Submittals" published by the Los Angeles County Department of Public Works.
- 3. All work must be performed by or under the direction of a registered geologist, certified engineering geologist, or registered civil engineer. A statement is required in the report that the registered professional in direct responsible charge actually supervised or personally conducted all the work associated with the project. All technical submittals must contain a wet ink signature and seal by one of the registered professionals.
- 4. Notify the regional Board at least seven days prior to commencing the field work so that our staff may be present.

You are required to submit a technical report detailing this phase of the investigation to this Regional Board by **April 15, 2005**. Failure to submit the required technical report by the due date, may result in an appropriate enforcement action by the Regional Board.

If you have any questions concerning this matter, please call Mr. Noman Chowdhury at (213) 576-6704.

Sincerely.

Gřegg Kwey, P.E.

Senior Water Resource Control Engineer

Cc: Ms. Yvonne Shanks, SWRCB, Underground Storage Tank Cleanup Fund Ms. Nancy Mastumoto, Water Replenishment District of Southern California Mr. Tim Smith, Los Angeles County DPW, Environmental Program Division Mr. James Anderson, Holguin, Fahan & Associates, Inc

California Environmental Protection Agency

Recycled Paper



### APPENDIX 2.

LOGS OF EXPLORATORY BORINGS

# LITHOLOGY (UNIFIED SOIL CLASSIFICATION SYSTEM)

	MAJOR DI	VISIONS	GROUP SYMBOLS	TYPICAL NAMES
10 Z	GRAVEL	GRAVELS WITH LITTLE OR NO FINES	GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
COARSE-GRAINED SOILS MORE THAN HALF IS LARGER THAN No. 200 SIEVE	MORE THAN HALF COARSE	OTTNOTINES	GP	POORLY-GRADED GRAVELS OR GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
:D Si	FRACTION IS LARGER THAN	GRAVELS WITH OVER 12% FINES	GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
AINEC IS LAR SIEVE	No. 4 SIEVE SIZE	12 /0 T IIVEO	GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
GRA HALF	SAND	SANDS WITH LITTLE OR NO FINES	SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
COARSE-GRAINED IORE THAN HALF IS LARC No. 200 SIEVE	MORE THAN HALF COARSE	ON NO FINES	SP	POORLY-GRADED SANDS OR GRAVELLY SANDS, LITTLE OR NO FINES
OAF	FRACTION IS SMALLER THAN	SANDS WITH OVER	SM	SILTY SANDS, SAND-SILT MIXTURES
O DM	No. 4 SIEVE SIZE	12% FINES	SC	CLAYEY SANDS, SAND-CLAY MIXTURES
LS			ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
SOILS SMALLER IEVE	SILT A	AND CLAY	CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
NED LF IS 200 S			OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
RAII AN HA			МН	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS
FINE-GRAINED MORE THAN HALF IS THAN No. 200 SI	SILT A	AND CLAY	СН	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
FII			ОН	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
	HIGHLY ORG	ANIC SOIL	Pt	PEAT AND OTHER HIGHLY ORGANIC SOILS

# SYMBOLS AND ACRONYMS

SOIL SAMPLE COLLECTED

SOIL SAMPLE NOT RECOVERED

☐ GROUNDWATER ENCOUNTERED DURING DRILLING

WELL BOX WITH LOCKING CAP

BLANK SCHEDULE 40 PVC CASING

MICROPOROUS BUBBLER

SLOTTED SCHEDULE 40 PVC CASING BOTTOM PLUG

ASPHALT

CONCRETE

BENTONITE/CEMENT GROUT

BENTONITE CHIPS OR PELLETS

FILTER SAND PACK
PID = PHOTOIONIZATION DETECTOR

ppmv = PARTS PER MILLION BY VOLUME

USCS = UNIFIED SOIL CLASSIFICATION SYSTEM

fbg = FEET BELOW GRADE OD = OUTSIDE DIAMETER



HOLGUIN, FAHAN & ASSOCIATES, INC.

**KEY TO LOG OF EXPLORATORY BORING** 

_		NAME: %gravel/sand/fines, gradation/plasticity, color, angularity, maximum size (gravels), density/consistency, moisture, stain				SLOT SIZE: 0.02"  FILTER PACK: #3 sand
	<del>-</del> 0	4" Asphalt			<u> </u>	0
	_					
	_					
	<del></del>	SAND: 0/100/0, fine- to medium-grained, poorly			SP	5
	_	graded, light brown, dry, no odor, no stain				
	_					
	_					19998 19999 19991 19999 1999 1999
	— — 10	SAND: 0/100/0, fine- to medium-grained, poorly	770	•		10
	_ 10	graded, light brown, dry, no odor, no stain	7,7,8	0		
	_					
	_					
	<del>-</del>					
	<u> </u>	SAND: 0/100/0, fine- to medium-grained, poorly graded, light gray, moderately moist, no odor, no stain	7,11,13	0		15
		<b>3</b> , <b>3</b> . <b>3</b> . <b>3</b> ,,	, ,			
	_				ML	
	_					
	<del></del>	SILT: 0/0/100, low plasticity, gray, very moist, no odor, no stain	8,9,10	0		20
		no odor, no stani				
						15
	_				SP	
	<del></del>	SAND: 0/100/0, fine-grained, poorly graded, gray, wet,	12,14,16	0		25
	_	no odor, no stain				
	<del>-</del> 30	SAND: 0/100/0, fine- to medium grained	11,14,15	0		30
	_	3	11,17,10	U		
	_					
	_					
	— — 35					35
DF		METHOD: CME-75 10-inch OD hollow-stem auger	DATE DEI	ITED: Fol	<u>                                       </u>	118181 - 118181
-	MPLER			BY: Tom		
_		RING DEPTH: 40 fbg				RG #4279
DI	EPTH TO	WATER: 19.5 fbg	DRILLED E	3Y: Casca	ade Drillin	g, Inc.
		HOLGUIN,				MW-5
4		FAHAN & LOG OF EXPL	ORATO	DRY B	ORING	
13	2	ASSOCIATES, INC.				Page 1 of 2

SA	AMPLE	CLIENT: ExxonMobil Oil Corporat	tion					ON DETAIL
		PROJECT: Service Station #18-MI		- REB			X GROUNDW VADOSE W	/ATER WELL √ELL
/AL	Ŧ.	LOCATION: 15757 Paramount Boulev		BLOWS PER 6 INCHES	PID (ppmv)	nscs	SPARGE W BORING	/ELL
INTERVAL	DEPTH (fbg)	DESCRIPTION AND SOIL CLASSIFIC		BLC 61	3	Ď	CASING: 4-in	ch Sch-40 PVC
≧		NAME: %gravel/sand/fines, gradation/plasticity maximum size (gravels), density/consistency, n	, color, angularity,				SLOT SIZE: 0.02 FILTER PACK:	2" #3 sand
$\vdash$	<del> 35</del>	SAND: 0/100/0, well graded, fine		9,9,9	0	SW	TIETERT ACK.	<del></del> 35
	_	gray, wet, no odor, no stain	to occide granica,	3,3,3		3		
	_							
	_							
		SAND: 0/100/0, well graded, fine	to cooree areined	12,15,20	0			
	<del> 40</del>	gray, wet, no odor, no stain	e- to coarse-grained,	/	<u> </u>		13343341	40
		\		<b>'</b>				
		Well terminated at	40 fbg					
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DF	RILLING I	METHOD: CME-75 10-inch OD hol	low-stem auger	DATE DR	LLED: Febi	ruary 15	2005	
		TYPE: 2-inch CA modified split sp			BY: Tom S			
TC	TAL BOR	RING DEPTH: 40 fbg		APPROVE	D BY: Marl	k Fahan,	RG #4279	
DE	EPTH TO	WATER: 19.5 fbg		DRILLED	BY: Casca	de Drilli	ng, Inc.	
		HOLGUIN,		•			М	W-5
4		FAHAN &	LOG OF EXP	LORAT	ORY B	ORING	• I	ge 2 of 2
2		ASSOCIATES, INC.					1	

SA	MPLE	CLIENT: ExxonMobil Oil Corporation				COMPLETION DETAIL  X GROUNDWATER WELL
		PROJECT: Service Station #18-MF0	BLOWS PER 6 INCHES	2		VADOSE WELL
\\	g)	LOCATION: 15757 Paramount Boulevard, Paramount, CA	OWS	PID (ppmv)	nscs	SPARGE WELL BORING
INTERVAL	DEPTH (fbg)	DESCRIPTION AND SOIL CLASSIFICATION	BL. 6		c	ASING: 4-inch Sch-40 PVC 0.02"
=		NAME: %gravel/sand/fines, gradation/plasticity, color, angularity, maximum size (gravels), density/consistency, moisture, stain			1	LOT SIZE: 0.02"  ILTER PACK: #3 sand
	— o	12" Concrete				
	_					
	_					
	_					
	<del></del> 5	SAND: 0/100/0, fine- to medium-grained, poorly graded, light brown, dry, no odor, no stain			SP	5
		, ,,,,				
	_					
	<del></del> 10	SAND: 0/100/0, fine- to medium-grained, poorly graded,	7,7,8	0		10
	_	light brown, dry, no odor, no stain				
Ш						
	<del></del> 15	SILTY SAND: 0/85/15, fine-grained, poorly graded,	5,6,8	0		15
	_	brown, moderately moist, no odor, no stain	0,0,0			
	_					
	_					
	_					15 - 15 - 20
П	— 20 —	SILT: 0/0/100, low plasticity, gray, wet, no odor, no stain	9,11,12	0	ML	20
	_					
	_					
	<del></del>	CLAYEY SILT: 0/0/100, low plasticity, gray, wet,	12,14,16	0	CL	25 €
	_	no odor, no stain				
Ш						
	<b>—</b> 30	SANDY SILT: 0/25/75, brown, low plasticity, gray, wet,	7,11,13	15	ML	30 €
		no stain, very slight sweet odor	, ,			
	_					
	— — 35					
		METHOD: CME 75 10 inch OD hallow stars average	DATE DO			
$\vdash$	MPLER	METHOD: CME-75 10-inch OD hollow-stem auger  TYPE: 2-inch CA modified split spoon		BY: Tom S	oruary 15, Shook	<b>∠</b> ∪∪⊃
_		RING DEPTH: 40 fbg			k Fahan, F	RG #4279
-		WATER: 19.5 fbg			ade Drilling	
		HOLGUIN,	I			<b>I</b>
		FAHAN & LOG OF EXPL	ORATO	RY B	ORING	MW-6
	33	ASSOCIATES, INC.				Page 1 of 2

SA	MPLE	CLIENT: ExxonMobil Oil Corporation	on				COMPLETION DE		
П		PROJECT: Service Station #18-MF0		BLOWS PER 6 INCHES			GROUNDWATER V VADOSE WELL	VELL	
۸L	F_			WS F NCHI	PID (ppmv)	uscs	SPARGE WELL BORING		
INTERVAL	DEPTH (fbg)	LOCATION: 15757 Paramount Bouleva DESCRIPTION AND SOIL CLASSIFICA		BLO 6 II	3)	Š	CASING: 4-inch Sch-	40 PVC	
Ξ	_	NAME: %gravel/sand/fines, gradation/plasticity, of maximum size (gravels), density/consistency, mo					SLOT SIZE: 0.02"  FILTER PACK: #3 sand		
	<del> 35</del>			10 15 10	-	2.41	FILTER PACK: #3 sand		
	_	SANDY SILT: 0/25/75, brown, low no stain, no odor	plasticity, gray, wet,	13,15,16	0	ML		— 35 —	
		,							
								_	
		CANDY OILT: 0/05/75, breaus, leaves		9 10 12	0			_	
	<del> 4</del> 0	SANDY SILT: 0/25/75, brown, low no stain, no odor	plasticity, gray, wet,	8,10,12	U			<del></del> 40	
			/					_	
	_	Well terminated at 4	·0 fbg						
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DRILLING METHOD: CME-75 10-inch OD hollow-stem auger					LLED: Feb	ruony 15	2005		
		TYPE: 2-inch CA modified split spo		BY: Tom S		,, <u>2</u> 003			
TOTAL BORING DEPTH: 40 fbg					APPROVED BY: Mark Fahan, RG #4279				
<b>-</b>		WATER: 19.5 fbg		DRILLED BY: Cascade Drilling, Inc.					
		HOLGUIN,	'				MW-6	3	
FAHAN & LOG OF EXPL			ORATO	RY BO	ORING	3 I			
ASSOCIATES, INC.							Page 2 of	_	

SA	AMPLE	CLIENT: ExxonMobil Oil Corporation				COMPLETION DETAIL  X GROUNDWATER WELL
		PROJECT: Service Station #18-MF0	BLOWS PER 6 INCHES	(A)		VADOSE WELL  SPARGE WELL
3VAL	DEPTH (fbg)	LOCATION: 15757 Paramount Boulevard, Paramount, CA	OWS	PID (ppmv)	nscs	BORING
INTERVAL	DEF (fb	DESCRIPTION AND SOIL CLASSIFICATION	BL 6		-	CASING: 4-inch Sch-40 PVC SLOT SIZE: 0.02"
-		NAME: %gravel/sand/fines, gradation/plasticity, color, angularity, maximum size (gravels), density/consistency, moisture, stain				FILTER PACK: #3 sand
П	<del>_</del> 0	5" Asphalt				[ <del>\d]</del> 0
	_					
	<b>—</b> 5	SAND: 0/100/0, fine- to medium-grained, poorly graded,			SP	_ 5
	_	dry, no odor, no stain			31	
	_					
	_					
	— — 10	CAND: 0/100/0 fine to modium argined nearly graded	470			
	10	SAND: 0/100/0, fine- to medium-grained, poorly graded, dry, no odor, no stain	4,7,8	0		
	_					
	_				ML	— 15 — 20 — 20
	_				IVIL	
П	<del></del> 15	SANDY SILT: 0/20/80, low plasticity, fine-grained sand, dark brown, moderately moist, no odor, no stain	8,10,11	0		
		dark brown, moderatory moles, no oder, no odam				
	_					
	_					
	— 20	SANDY SILT: 0/5/95, low plasticity, fine-grained sand,	8,10,12	0		
	_	dark brown, very moist, no odor, no stain				
	_					
Ш					SP	
	<del></del> 25	SILTY SAND: 0/80/20, fine-grained sand, poorly	7,8,10	0		
	_	graded, greenish gray, wet, no odor, no stain	7,0,10	Ū		
	_					
	_					
	_	CANID: 0/400/0 first to read the service of reads.		_		
П	— 30 —	SAND: 0/100/0, fine- to medium-grained, poorly graded, gray, wet, no odor, no stain	8,10,11	0		30
	_					- 30 - 30 - 30 - 35
	<u> </u>					
	<u> </u>					
	<del></del>					35
_		METHOD: CME-75 10-inch OD hollow-stem auger		LLED: Febr		2005
SAMPLER TYPE: 2-inch CA modified split spoon				BY: Tom S		DC #4070
$\vdash$		RING DEPTH: 40 fbg				RG #4279
	=PIH IO	WATER: 19.5 fbg	DKILLED E	3Y: Casca	ide Drillir	Ī
1-	HOLGUIN, FAHAN & LOG OF EXPL			MW-		
1	3	ASSOCIATES, INC. LOG OF EXPL	UHAIC	THE B	OKINC	Page 1 of 2

SA	MPLE	CLIENT: ExxonMobil Oil Corpora	tion					ETION DE	
П		PROJECT: Service Station #18-M		SER			K GROU VADO	INDWATER I SE WELL	WELL
۸L	F_			BLOWS PER 6 INCHES	PID (ppmv)	nscs	SPARO	GE WELL JG	
INTERVAL	DEPTH (fbg)	LOCATION: 15757 Paramount Boule  DESCRIPTION AND SOIL CLASSIFI		BLO 6 II	<u> </u>	l š	CASING:	4-inch Sch-	40 PVC
Z	_	NAME: %gravel/sand/fines, gradation/plasticity maximum size (gravels), density/consistency, i					SLOT SIZE: FILTER PACK	0.02" (: #3 sand	
	35	SAND: 0/100/0, fine- to medium		460	0	0.0	FILTER PACE	#O Sanc	· 35
	_	gray, wet, no odor, no stain	grained, poorly graded,	4,6,8	0	SP			33 
	<u> </u>								
							10.5403 10.503 10.503		_
	_			10,12,14	0				_
	<del></del>	SAND: 0/100/0, fine- to mediun poorly graded, gray, wet, no od	n-grained,	10,12,14			1.134.13	<u>u                                    </u>	<del>-</del> 40
		poorly graded, gray, wet, no od	or, no stain						
		Well terminated at	40 fbg						
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DRILLING METHOD: CME-75 10-inch OD hollow-stem auger					DATE DRILLED: February 16, 2005				
SAMPLER TYPE: 2-inch CA modified split spoon					BY: Tom S				
	TOTAL BORING DEPTH: 40 fbg				APPROVED BY: Mark Fahan, RG #4279				
DE	PTH TC	WATER: 19.5 fbg		DRILLED E	BY: Casca	de Drilli	ng, Inc.		
HOLGUIN, FAHAN & LOG OF EXP			1000==	004=	<b>.</b>	<b>^</b>	<u>,</u>	MW-	7
4		ASSOCIATES, INC.	UKAI	JKY B	OKIN(	<i>i</i>	Page 2 o	of 2	



### APPENDIX 3.

**ENCROACHMENT PERMIT** 

leaved By: RRICO lesued Date: 24-JAN-05



Permit # PCEA 200500239

Related Permit:

Permit Office: 4

PC-MOMMELL MONITORING WELL COUNTY OF LOS ANGELES-DPW Department Of Public Morks Albembrs, CA 91803 - (626) 456-3129

Encroachment (Annual)

Individual's / Company Name

Address / Gity, State Zip

Work Phone

Home Phone

(APP) HOLGUIN FAHAN & ASSOCIATES

143 S. FIGUEROA ST.

(805) 585-6371

(CNT) HOLGUIN FAHAN & ASSOCIATES

VENTURA, CA 93001

(805) 585-6371

143 S. FIGUEROA ST. VENTURA, CA 93001

**Emergency Contact** 

Location

Site Address: 15757 PARAMOUNT BL

Description:

Scope of Work

PURPOSE : INSTALLATION OF MONITORING WELL AND TAKING OF SAMPLES. PERMIT EXPIRES ONE YEAR FROM DATE OF

TO INSTALL AND MONITOR ONE MONITORING WELL. TRAFFIC CONTROL PER STATE OF CALIFORNIA OF TRAFFIC CONTROL

MANUAL HANDBOOK

Permit Detail

ATTACHHENT

LAPWRP612R

PAR446

THOMAS GUIDE

735-H5

Comments

RRICO 24-JAN-05

ROAD DEPARTMENT NO. :

RECEIPT NUMBER 05-00379 FOR PERMIT NUMBER 200500239

Fee Code PCMONWELL Acount Code B03\_8345

Asount \$319.00

INSPECT MONITORING WELLS ISSUANCE FEE ENCROACHMENT

PC053003

B03\_8333

\$43.00 \$362.00

Total Pess

CHECK

### By: RRICO 22 Date: 24-JAN-05



Permit#: PCEA 200500239

Related Permit

Permit Office: 4

Is hereby permitted to complete scope of work on the public highways subject to provident negatived by County of Lee Angeles Highway Fermit Ordinance (Orridon 1 of Fife 16, Los Angeles County Coto), the Menicipal Coto, and City Ordinance governing the area where this work is to be done, and the attachments because specified. For the county of Lee Angeles Director, in consideration of granting of this portait, it is agreed by the applicant that the County of Lee Angeles under the city wherein the permit work is to be performed and any of their officers or susplayed theoret shall be mixed farmation by the applicant from any liability or respectibility for any accident, here, or damage to persons or property, happening occurring as the president of any of the work understand under the terms of this application and the permit or permit which may be granted in response thereto, and that all of sold inhibition are hereby assumed by the applicant, it is further agreed that if any part of this installation betterform with the future are of the highway by the general public, it must be removed or relacated, audastgasted by the Director of Public Works or Supplemental of Street, at the expense of the permitter of the second residence with Section 3500 of the fallow Const.

Performance of the work of activity under this sermit is tantamount to agreeing to the conditions of this period. Copy of this permit shall be kept at work sits during period of operation within District afficed right of way and shall be shown to District's representative or any law enforcement officer upon demand.

### INSPECTION REQUIRED

CALL PERMIT OFFICER 24 HOURS SEFORE STARTING WORK UNDER THIS PERMIT. FAILURE TO DO SO IS CAUSE FOR REVOCATION OF THIS PERMIT, THIS PERMIT IS VOID IF WORK NOT STARTED IN 60 DAYS (FOR ROAD PERMIT) OR 180 DAYS (FOR FLOOD PERMIT) FROM THE DATE OF THE IDSUANCE.

PERMIT OFFICE NO. PCHD CQN Hollydate Office 11282 SOUTH-GARFIELD AVENUE HOLLYDALE, CA PHONE NO. 323-773-4834 FAX NO. 862-869-2895





# THESE REQUIREMENTS & 200500239

NTS AND ATTACKED TO AND MADE A PART OF PERMIT NO. PCEA

2005

DATE: January 24.

# Construction and Engraphment Permit Regulrements

# **GENERAL REQUIREMENTS**

- All work shall comply with the current "GREENBOOK" (Standard Specifications for Public Works Construction)
  and "GRAYBOOK" (Additions and Amendments to the Standard Specifications for Public Works Construction),
  and applicable State and Local laws.
- If at any time subsequent to the exercising of this Permit it becomes necessary again to repair such surface due to settlement or any other cause directly attributed to this Permit, the permittee shall pay the Director the cost of such additional repair or, the Director may require the permittee to make the repair. (Highway Permit Ordinance Section 16.14.040)
- 3. Authorization for excavations for removal or construction of substructures by this Permit require the Permittee to receive a "ticket number" from Underground Service Alert, telephone number 1-800-422-4133, and said "Ticket number is entered on the face of the Permit by the permittee. Underground Service Alert requires a minimum of 48 hours notice prior to the beginning of excavation to verify the location of existing underground facilities. "GREENBOOK" (Section 5)

# TRAFFIC REQUIREMENTS

- Special Traffic Control Provisions must comply with current "GRAYBOOK" (Section 7-10.3) and "GREENBOOK" (Section 7-10) requirements unless a specific control plan is approved as part of the Permit.
- No street shall be closed without prior approval of the Director or authorized representative. A written request, along with a traffic plan prepared by a civil engineer, an application must be to the County of Los Angeles Department of Public Works, Attention: Construction Division Permits Engineer, P.O. Box 1460, Alhambra, CA 91802-1460.
- Streets to be posted, as "TEMPORARY NO PARKING" must be done 48 hours prior to starting work. Only County
  approved "TEMPORARY NO PARKING" signs shall be used. Signs are available for purchase at each
  Department of Public Works Permit Office.

# REQUIREMENTS FOR PAVEMENT RESURFACING IN HIGHWAY PERMITTEE TO REPAIR

 Installation of temporary or new pavement resurfacing must comply with Section 306-1.5 of the "GREENBOOK" and "GRAYBOOK"



### APPENDIX 4.

SOIL BORING, DIRECT-PUSH SAMPLING, AND WELL CONSTRUCTION PROCEDURES

### SOIL BORING, DIRECT-PUSH SAMPLING, AND WELL CONSTRUCTION PROCEDURES

### PRE-DRILLING PROTOCOL

### Planning

Prior to the start of drilling, necessary permits, site access agreements, and/or encroachment permits are obtained. As-built drawings are obtained if possible. At least 2 weeks in advance of drilling, notifications are made to the property owner, client representative, on-site facility manager, regulatory agency, and/or other appropriate parties. At least 48 hours prior to drilling, Underground Service Alert of Southern California, Arizona Blue Stake, or an equivalent utility locating service is notified. A geophysical survey may be conducted to locate subsurface utilities. Site plans and/or as-built drawings are compared to actual conditions observed at the site. The property owner/retailer is interviewed to gain information about locations of former UST systems (including dispensers, product lines, and vent lines). A visual inspection is made of the locations of the existing UST system, and scars and patches in pavement are noted. The critical zone, which is defined as 10 feet from any part of the UST system as well as the area between the dispensers and USTs, is identified, and any proposed drilling locations within the critical zone may be subject to special hole clearance techniques. Drilling locations within the critical zone are avoided if possible.

A site-specific, worker health and safety plan, including a JSA and traffic control plan for all soil sampling locations for the site, is available at all times during drilling activities. Prior to commencing field activities, a health and safety meeting is held among all on-site personnel involved in the operations, including subcontractors and visitors, and is documented with a health and safety meeting sign-in form. The emergency shut-off switch for the service station is located prior to the start of the drilling activities. A fire extinguisher and "No Smoking" signs (and Proposition 65 signs in California) are present at the site prior to the start of the drilling activities.

In order to determine the natural subsurface conditions, better recognize fill conditions, and prevent cross contamination, the first sampling location is generally located the furthest from any suspected underground improvement.

When drilling a soil boring in asphalt or concrete, a minimum 10-inch round cut is made. When advancing a direct-push location, a minimum 3.5-inch round cut is made.

### **Hole Clearance**

The minimum hole clearance depths are 5 feet below grade (fbg) outside the critical zone and 8 fbg within the critical zone and are conducted as follows:

- 0 to 5 fbg: The area to be cleared exceeds the diameter of the largest tool to be advanced and is large enough to allow for visual inspection of any obstructions encountered. The first 1 to 2 feet of soil or fill is removed by hand digging, then the borehole is probed using a blunt-tipped tool to ensure that no obstructions exist anywhere near the potential path of the drill auger or push-type sampler. Probing is extended laterally as far as possible. Hand augering or post-hole digging then proceeds, but only to the depth that has been probed. If subsurface characteristics prohibit effective probing, a hand auger is carefully advanced past the point of probing. In this case, sufficient hand augering or post-hole digging is performed to remove all the soil in the area to be delineated. For soil borings located outside of the critical zone, an attempt should be made to probe an additional 3 feet.
- 5 to 8 fbg: For the soil borings located inside the critical zone, probing and handclearing an additional 3 feet is performed. If probing is met with refusal, then trained personnel advance a hand auger without excessive force.

Alternate or additional subsurface clearance procedures may also be employed, as required by clients, permit conditions, and/or anticipated subsurface conditions (for example, near major utility corridors or in hard soils). Alternate clearance techniques may include performing a geophysical investigation or using an air knife or water knife. If subsurface conditions prevent adequate subsurface clearance, the field activities cease until the client gives written approval of a procedure for continuation.

When pea gravel, fill sand, or other non-indigenous material is encountered, the sampling location is abandoned unless the absence of subsurface facilities can be demonstrated and client approval to proceed is obtained. If hole clearance activities are conducted prior to the actual day of drilling, the holes are covered with plates and/or backfilled.

If any portion of the UST system is encountered, or if there is any possibility that it has been encountered, the work ceases, and the client is notified immediately. If there is reason to believe that the product system has been damaged, the emergency shut-off switch is activated. The client will decide if additional uncovering by hand is required. If it is confirmed that the UST system has been encountered, tightness tests are performed as required by the client. The hole is backfilled only with client approval.

### SOIL SAMPLING PROCEDURES

Soil samples are collected using one of the following methods:

- Manual drilling: Manual drilling utilizes a hand auger. Soil samples are collected with a drive sampler outfitted with steel or brass sleeves. The specific equipment used is noted on a log of exploratory boring.
- Truck-mounted, powered drilling: Truck-mounted, powered drilling utilizes hollow-stem
  flight auger drilling, air rotary drilling, percussion hammer drilling, or similar technologies. Soil
  samples are collected in steel or brass sleeves with a California-modified, split-spoon
  sampler or, for specific projects, a continuous sampler. The specific equipment used is
  noted on a log of exploratory boring.
- Direct push sampling: Direct push sampling utilizes Geoprobes, cone penetrometer testing
  rigs, or similar technologies. Soil samples are collected with a drive sampler outfitted with
  steel, acetate or brass sleeves. The specific equipment used is noted on a log of soil
  sample descriptions.

Before each soil sampling episode, the sampling equipment is decontaminated using a non-phosphate soap and water wash, and two tap-water rinses. The drill augers or direct-push rods are decontaminated with a steam cleaner between each soil boring (truck-mounted rigs).

Soil samples that are collected in sample sleeves are covered with aluminum foil or Teflon tape followed by plastic caps. If EPA Method 5035 is required, then 5 to 20 grams of soil is extracted from the sample and placed in methanol-preserved containers supplied by the laboratory, or subsamples are collected using Encore samplers. During the sampling process, soil samples and cuttings are field screened for VOCs using a photoionization detector calibrated to an isobutylene or hexane standard. The calibration information is recorded on an equipment calibration log. Any soil staining or discoloration is visually identified. Soils are classified according to the Unified Soil Classification System. Specific geologic and hydrogeologic information collected includes grading, plasticity, density, stiffness, mineral composition, moisture content, soil structure, grain size, degree of rounding, and other features that could affect contaminant transport. All data are recorded on a soil boring log under the supervision of a geologist registered in the state in which the site is located. The samples are labeled, sealed, recorded on a chain-of-custody record, and chilled to 4°C in accordance with the procedures outlined in the California State Water Resources Control Board's Leaking Underground Fuel Tank Field Manual or the Arizona Department of Environmental Quality's (ADEQ's) Leaking Underground Storage Tank Site Characterization Manual. preservation, handling, and transportation procedures are consistent with Holguin, Fahan & Associates, Inc.'s quality assurance/quality control procedures. The samples are transported in a chilled container to a state-certified, hazardous waste testing laboratory.

Cuttings from the soil borings are stored in 55-gallon, Department of Transportation (DOT) approved drums, roll-off bins, or other appropriate containers, as approved by the client. Each container is labeled as waste material or non-hazardous waste, with the number of the soil boring(s) from which the waste was derived, the date the waste was generated, the generator name, and other pertinent information. The drums are stored at the site of generation, or at another location approved by the client until sample laboratory analytical results are obtained, at which time the soil is disposed of appropriately.

A soil boring log is completed for each soil sampling location and includes the following minimum information:

- date of drilling;
- · project name and location;
- soil sample names and depths;
- soil descriptions and classifications;
- standard penetration counts (rigs);
- photoionization detector readings;
- drilling equipment;
- soil boring diameter;
- sampling equipment;
- depth to groundwater in soil boring;
- · name of person performing logging;
- name of supervising registered geologist; and
- name of drilling company (rigs and direct push).

### HYDROPUNCH GROUNDWATER SAMPLING PROCEDURES

Hydropunch sampling of groundwater is designed for collecting discrete, one-time samples of groundwater for analysis during the drilling or direct-push operations. The Hydropunch sampler consists of a 5-foot long, 1.5-inch diameter screen sheathed by a 2-inch diameter, steel barrel. A disposable point is connected to the bottom of the screen. The Hydropunch assembly is lowered through the hollow-stem auger and driven into the undisturbed soils below the base of the hole, or is pushed into the soil using a direct push rig. The outer sheath is then retracted to expose the screen. A bailer is then lowered into the Hydropunch assembly and retrieves a sample of the groundwater within the assembly.

The extracted groundwater is collected in chilled, 40-milliliter, volatile organic analysis vials having Teflon-lined caps, or other appropriate containers as required by the respective analytical method. For organic compound analyses, hydrochloric acid preservative is added to all containers by the laboratory to lower sample pH. Samples are held at 4°C while in the field

and in transit to the laboratory. Analysis is performed by a state-certified, hazardous waste testing laboratory.

Documentation requirements include:

- sample identification number;
- borehole identification number;
- time and date of sample collection;
- depth at which Hydropunch sample was collected;
- · name of person collecting sample;
- number and types of sample containers; and
- type of preservative used, if any.

### **BOREHOLE COMPLETION PROCEDURES**

All sampling locations are either properly abandoned or completed as a well.

### **Abandonment**

Each borehole/sample location that is not completed as a well is backfilled with bentonite grout, neat cement, concrete, or bentonite chips with a permeability less than that of the surrounding soils, and/or soil cuttings, depending on local regulatory requirements or client instructions. Grout is placed by the tremie method. Backfilling is performed carefully to avoid bridging. The type of backfill material is noted on the log.

### **Well Installation**

Wells are designed according to applicable state and local regulations as well as project needs. Details of the well design and construction are recorded on the log and include the following minimum information (in addition to the items noted above for soil borings):

- detailed drawing of well;
- type of well (groundwater, vadose, or air sparging);
- casing diameter and material;
- screen slot size;
- well depth and screen length (±1 foot);
- filter pack material, size, and placement depths;
- annular seal material and placement depths; and
- surface seal design/construction.

Groundwater monitoring wells are generally designed with 30 feet of slotted casing that crosses the water table, unless site conditions, project needs, or local regulations dictate a different well design. Vadose wells are designed with slotted casing appropriate for the project needs, e.g.

slotted in hydrocarbon-containing intervals for vapor extraction. Air sparging wells are typically designed with 5 feet of slotted casing placed 15 feet below the water table. The sand pack is placed at least two feet above the top of the screen, and at least 3 feet of low permeability seal material is placed between the sand pack and the surface seal, unless shallow groundwater conditions exist (less than 5 fbg). The sand pack and low permeability seal material are placed in the annular space from the bottom up using the tremie method.

When drilling in asphalt, a 24-inch round cut is made for the well pad. When drilling on concrete, a 2 x 2-foot square or 24-inch circle is sawcut. The well cover is traffic-rated and has a white lid with a black triangle painted on it (3 inches per side) or a black lid with a white triangle (3 inches per side). The well pad is completed using concrete of a color matching the existing surface. The well number is labeled on the outside of the well box/pad and the inside of the well box. The number on the outside is painted on with a stencil, stamped, or attached to the well with a metal plate. The number on the inside is written on the well cap with waterproof ink. The casing has a notch or indication on its north side indicating a unique measuring/surveying point. Well casings are capped with a locking or slip well cap.

### Well Development

Well development is conducted by the use of surge blocks, bailers, pumps, or other appropriate methods in accordance with the requirements of the California Department of Water Resources Bulletin #74–81 dated December 1981, or ASTM International 4448-85a (as required by the ADEQ). Only formation water is used for surging the well. Well development continues until non-turbid groundwater is produced or turbidity stabilizes. The method of development and the volume of groundwater produced is recorded in the field log. All purged groundwater is held on-site, or at another location approved by the client, in sealed, 55-gallon DOT approved drums or other appropriate containers pending transport to an approved recycling facility.

### Well Elevation Survey

The elevation of the north side of the top of well casing (or other appropriate reference point from which the depth to groundwater can be measured) is surveyed to an accuracy of  $\pm 0.01$  foot. All measurements are reproduced to assure validity. Surveying may be performed by a state-licensed surveyor if required by state or local regulations. In the state of California, wells are surveyed in accordance with AB2886.

### DATA REDUCTION

The data compiled from the soil borings are summarized and analyzed. A narrative summary of the soil characteristics is also presented. The logs are checked for the following information:

- correlation of stratigraphic units among sampling locations;
- identification of zones of potentially high hydraulic conductivity;
- identification of the confining layer;
- indication of unusual/unpredicted geologic features (fault zones, fracture traces, facies changes, solution channels, buried stream deposits, cross-cutting structures, pinchout zones, etc.); and
- continuity of petrographic features such as sorting, grain-size distribution, cementation, etc.

Soil boring/well locations are plotted on a properly scaled map. If appropriate, soil stratigraphy of the site is presented in a scaled cross section. Specific features that may impact contaminant migration, e.g., fault zones or impermeable layers, are discussed in narrative form and supplemented with graphical presentations as deemed appropriate.



### APPENDIX 5.

LABORATORY REPORTS



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2/24/05

### HOLGUIN, FAHAN & ASSOCIATES 10166 JAMES ANDERSON 143 SOUTH FIGUEROA STREET VENTURA, CA 93001

This report includes the analytical certificates of analysis for all samples listed below. These samples relate to your project identified below:

Project Name: EXXONMOBIL 18-MFO

Project Number: .

Laboratory Project Number: 406572.

An executed copy of the chain of custody, the project quality control data, and the sample receipt form are also included as an addendum to this report. Any QC recoveries outside laboratory control limits are flagged individually with an #. Sample specific comments and quality control statements are included in the Laboratory notes section of the analytical report for each sample report. If you have any questions relating to this analytical report, please contact your Laboratory Project Manager at 1-800-765-0980. Any opinions, if expressed, are outside the scope of the Laboratory's accreditation.

		Page 1
Sample Identification	Lab Number	Collection Date
		After the other sets that our time term and the sees and
MW-5-10	05-A22045	2/15/05
MW-5-15	05-A22046	2/15/05
MW-5-20	05-A22047	2/15/05
MW-6-10	05-A22048	2/15/05
MW-6-15	05-A22049	2/15/05
MW-6-20	05-A22050	2/15/05



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Sample Identification

Lab Number

Page 2 Collection Date

These results relate only to the items tested. This report shall not be reproduced except in full and with permission of the laboratory.

Roxanne & Connor

Report Approved By:

Report Date: 2/24/05

Johnny A. Mitchell, Laboratory Director Michael H. Dunn, M.S., Technical Director Pamela A. Langford, Senior Project Manager Eric S. Smith, QA/QC Director Sandra McMillin, Technical Services Gail A. Lage, Senior Project Manager Glenn L. Norton, Technical Services Kelly S. Comstock, Technical Services Roxanne L. Connor, Senior Project Manag Mark Hollingsworth, Director of Project

Laboratory Certification Number: 01168CA

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### ANALYTICAL REPORT

HOLGUIN, FAHAN & ASSOCIATES 10166

JAMES ANDERSON

143 SOUTH FIGUEROA STREET

VENTURA, CA 93001

Project:

Project Name: EXXONMOBIL 18-MFO

Sampler: TOM SHOOK

Lab Number: 05-A22045 Sample ID: MW-5-10 Sample Type: Soil Site ID: 18-MFO

Date Collected: 2/15/05 Time Collected: 8:30 Date Received: 2/17/05 Time Received: 7:55

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
**************************************			******						
*GENERAL CHEMISTRY PARAME	TERS*								
% Dry Weight	77.6	8		1.0	2/23/05	15:39	Fitzwater	CLP	1,488
*ORGANIC PARAMETERS*									
**TPH (Gasoline Range)	ND	mg/kg	6.44	50.0	2/19/05	9:03	A. Cobbs	8015B	2590
*VOLATILE ORGANICS*									
**Ethyl-t-butylether	ND	mg/kg	0.0023	10	2/23/05	20:36	J. Adams	8260B	4459
**tert-methyl amyl ether	ND	mg/Kg	0.0023	1.0	2/23/05	20:36	J. Adams	8260B	4459
**Tertiary butyl alcohol	ND	mg/kg	0.0583	1.0	2/23/05	20:36	J. Adams	8260B	4459
**Benzene	ND	mg/kg	0.0023	1.0	2/23/05	20:36	J. Adams	8260B	4459
**Ethylbenzene	ND	mg/kg	0.0023	1.0	2/23/05	20:36	J. Adams	8260B	4459
**Toluene	ND	mg/kg	0.0023	1.0	2/23/05	20:36	J. Adams	8260B	4459
**Xylenes (Total)	ND	mg/kg	0.0023	1.0	2/23/05	20:36	J. Adams	8260B	4459
**Methyl-t-butyl ether	ND	mg/kg	0.0023	1.0	2/23/05	20:36	J. Adams	8260B	4459
Ethanol	ND	mg/kg	0.233	1.0	2/23/05	20:36	J. Adams	8260B	4459
**Diisopropyl ether	ND	mg/kg	0.0023	10	2/23/05	20:36	J. Adams	8260/SA05-77	4459

Sample Extraction Data

	Wt/Vol					
Parameter	Extracted	Extract Vol	Date	Time	Analyst	Method
THE RES. LEW CO., LANS AND AND AND AND AND AND AND AND	190 MA WE THE THE MAY MAY THE WAY	~ ~ ~	_ ~ ~			
Volatile Organic	s 4.29 g	5.0 ml	2/15/05	8:30	N. Noman	5035
BTX Prep	3.88 g	5.0 ml	2/18/05	13:20	A. Cobbs	5035



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### ANALYTICAL REPORT

Laboratory Number: 05-A22045

Sample ID: MW-5-10

Project: Page 2

Surrogate	% Recovery	Target Range
UST surr-Trifluorotoluene	90.	63 127.
VOA Surr, 1,2-DCAd4	101.	72. ~ 134.
VOA Surr Toluene-d8	100.	76 122.
VOA Surr, 4-BFB	101.	60 138.
VOA Surr, DBFM	95.	75, - 137,

### LABORATORY COMMENTS:

ND = Not detected at the limit of detection

B = Analyte was detected in the method blank.

J = Estimated Value below Report Limit.

E = Estimated Value above the calibration limit of the instrument.

# = Recovery outside Laboratory historical or method prescribed limits.

\*\* = NELAC E87358 Certified Analyte

All results reported on a wet weight basis.



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Lab Number: 05-A22046

Sample ID: MW-5-15

Sample Type: Soil

### ANALYTICAL REPORT

HOLGUIN, FAHAN & ASSOCIATES 10166

JAMES ANDERSON

143 SOUTH FIGUEROA STREET

VENTURA, CA 93001

Site ID: 18-MFO Date Collected: 2/15/05

Project:

Time Collected: 8:35 Date Received: 2/17/05 Project Name: EXXONMOBIL 18-MFO Sampler: TOM SHOOK Time Received: 7:55

			· · · · · · · · · · · · · · · · · · ·						
Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analvst	Method	Batch
That yes					Date	TIME	Analyst		
*GENERAL CHEMISTRY PARAME	TERS*								
% Dry Weight	81,2	*		1.0	2/23/05	15:39	Fitzwater	CLP	1488
*ORGANIC PARAMETERS*									
**TPH (Gasoline Range)	ND	mg/kg	6.39	50.0	2/19/05	9:34	A. Cobbs	8015B	2590
*VOLATILE ORGANICS*									
**Ethyl-t-butylether	ND	mg/kg	0.0023	1.0	2/23/05	20:55	J. Adams	8260B	4459
**tert~methyl amyl ether	ND	mg/Kg	0.0023	1.0	2/23/05	20:55	J. Adams	8260B	4459
**Tertiary butyl alcohol	ND	mg/kg	0.0568	1.0	2/23/05	20:55	J. Adams	8260B	4459
**Benzene	ND	mg/kg	0.0023	1.0	2/23/05	20:55	J. Adams	8260B	4459
**Ethylbenzene	ND	mg/kg	0.0023	1.0	2/23/05	20:55	J. Adams	8260B	4459
**Toluene	0.0016 J	mg/kg	0.0023	1.0	2/23/05	20:55	J. Adams	8260B	4459
**Xylenes (Total)	0.0036	mg/kg	0.0023	1.0	2/23/05	20:55	J. Adams	8260B	4459
**Methyl-t-butyl ether	ND	mg/kg	0.0023	1.0	2/23/05	20:55	J. Adams	8260B	4459
Ethanol	ND	mg/kg	0.227	1.0	2/23/05	20:55	J. Adams	8260B	4459
**Diisopropyl ether	ND	mg/kg	0.0023	1.0	2/23/05	20:55	J. Adams	8260/SA05-77	4459

Sample Extraction Data

	Wt/Vol					
Parameter	Extracted	Extract Vol	Date	Time	Analyst	Method
		**********				
Volatile Organic	s 4.40 g	5.0 ml	2/15/05	8:35	N. Noman	5035
BTX Prep	3.91 g	5.0 ml	2/18/05	13:21	A. Cobbs	5035



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### ANALYTICAL REPORT

Laboratory Number: 05-A22046

Sample ID: MW-5-15

Project: Page 2

Surrogate	% Recovery	Target Range
UST surr-Trifluorotoluene	89.	63 127.
VOA Surr, 1,2-DCAd4	93.	72 134.
VOA Surr Toluene-d8	101.	76 122.
VOA Surr, 4-BFB	100.	60 138.
VOA Surr, DBFM	97.	75 137.

### LABORATORY COMMENTS:

ND = Not detected at the limit of detection

B = Analyte was detected in the method blank.

J = Estimated Value below Report Limit.

E = Estimated Value above the calibration limit of the instrument.

# = Recovery outside Laboratory historical or method prescribed limits.

\*\* = NELAC E87358 Certified Analyte

All results reported on a wet weight basis.



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### ANALYTICAL REPORT

HOLGUIN, FAHAN & ASSOCIATES 10166

JAMES ANDERSON

143 SOUTH FIGUEROA STREET

VENTURA, CA 93001

Project:

Project Name: EXXONMOBIL 18-MFO

Sampler: TOM SHOOK

Lab Number: 05-A22047 Sample ID: MW-5-20 Sample Type: Soil Site ID: 18-MFO

Date Collected: 2/15/05 Time Collected: 8:40
Date Received: 2/17/05 Time Received: 7:55

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
*GENERAL CHEMISTRY PARAME	TERS*								
% Dry Weight	73.9	8		1.0	2/23/05	15:39	Fitzwater	CLP	1488
*ORGANIC PARAMETERS*  **TPH (Gasoline Range)	ND	mg/kg	15.3	50.0	2/19/05	10:06	A. Cobbs	8015B	2590
*VOLATILE ORGANICS*									
**Ethyl-t-butylether	ND	mg/kg	0.0021	1.0	2/23/05	21:15	J. Adams	8260B	4459
**tert-methyl amyl ether	ND	mg/Kg	0.0021	1.0	2/23/05	21:15	J. Adams	8260B	4459
**Tertiary butyl alcohol	ND	mg/kg	0.0534	1.0	2/23/05	21:15	J. Aďams	8260B	4459
**Benzene	ND	mg/kg	0.0021	1.0	2/23/05	21:15	J. Ađams	8260B	4459
**Ethylbenzene	ND	mg/kg	0.0021	1.0	2/23/05	21:15	J. Adams	8260B	4459
**Toluene	0.0015 J	mg/kg	0.0021	1.0	2/23/05	21:15	J. Adams	8260B	4459
**Xylenes (Total)	ND	mg/kg	0.0021	1.0	2/23/05	21:15	J. Ađams	8260B	4459
**Methyl-t-butyl ether	ND	mg/kg	0.0021	1.0	2/23/05	21:15	J. Adams	8260B	4459
Ethanol	ND	mg/kg	0.214	1.0	2/23/05	21:15	J. Adams	8260B	4459
**Diisopropyl ether	ND	mg/kg	0.0021	1.0	2/23/05	21:15	J. Adams	8260/SA05-77	4459

Sample Extraction Data

	Wt/Vol					
Parameter	Extracted	Extract Vol	Date	Time	Analyst	Method
	175 MA 195 151 175 186 MF M5 500	100 100 all to all 100 100 all to all to all to	700 AH HEF BOX AFE BUT HE THE	*** *** *** ****	WAS Lot, MIN. Lo., INS. Th., Add. Will Will The	27 July 100 700 AS 1007 WA 888 27
Volatile Organic	s 4.68 g	5.0 ml	2/15/05	8:40	N. Noman	5035
BTX Prep	1.63 g	5.0 ml	2/18/05	13:22	A. Cobbs	5035



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### ANALYTICAL REPORT

Laboratory Number: 05-A22047

Sample ID: MW-5-20

Project: Page 2

Surrogate	% Recovery	Target Range
	after only after only the last only for the	
UST surr-Trifluorotoluene	90.	63 127.
VOA Surr, 1,2-DCAd4	96.	72. ~ 134.
VOA Surr Toluene-d8	101.	76 122.
VOA Surr, 4-BFB	105.	60 138.
VOA Surr, DBFM	99.	75 137.

### LABORATORY COMMENTS:

ND = Not detected at the limit of detection

B = Analyte was detected in the method blank.

J = Estimated Value below Report Limit.

E = Estimated Value above the calibration limit of the instrument.

# = Recovery outside Laboratory historical or method prescribed limits.

\*\* = NELAC E87358 Certified Analyte

All results reported on a wet weight basis.



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### ANALYTICAL REPORT

HOLGUIN, FAHAN & ASSOCIATES 10166 JAMES ANDERSON

143 SOUTH FIGUEROA STREET

VENTURA, CA 93001

Project:

Project Name: EXXONMOBIL 18-MFO

Sampler: TOM SHOOK

Lab Number: 05-A22048 Sample ID: MW-6-10 Sample Type: Soil Site ID: 18-MFO

Date Collected: 2/15/05 Time Collected: 11:50 Date Received: 2/17/05 Time Received: 7:55

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
*GENERAL CHEMISTRY PARAME		0			0.100.105	45.00	-1.		
% Dry Weight	88.7	*		1.0	2/23/05	15:39	Fitzwater	CLP	1488
*ORGANIC PARAMETERS*									
**TPH (Gasoline Range)	ND	mg/kg	6.27	50.0	2/19/05	10:38	A. Cobbs	8015B	2590
**************************************									
*VOLATILE ORGANICS*					G . G S . G S				
**Ethyl-t-butylether	ND	mg/kg	0.0026	1.0	2/23/05		J. Adams	8260B	4459
**tert~methyl amyl ether	ND	mg/Kg	0.0026	1.0	2/23/05	21:34	J. Adams	8260B	4459
**Tertiary butyl alcohol	ND	mg/kg	0.0644	1.0	2/23/05	21:34	J. Adams	8260B	4459
**Benzene	ND	mg/kg	0.0026	1.0	2/23/05	21:34	J. Adams	8260B	4459
**Ethylbenzene	ND	mg/kg	0.0026	1.0	2/23/05	21:34	J. Adams	8260B	4459
**Toluene	ND	mg/kg	0.0026	1.0	2/23/05	21:34	J. Adams	8260B	4459
**Xylenes (Total)	ND	mg/kg	0.0026	1.0	2/23/05	21:34	J. Adams	8260B	4459
**Methyl-t-butyl ether	ND	mg/kg	0.0026	1.0	2/23/05	21:34	J. Adams	8260B	4459
Ethanol	ND	mg/kg	0.258	1.0	2/23/05	21:34	J. Adams	8260B	4459
**Diisopropyl ether	ND	mg/kg	0.0026	1.0	2/23/05	21:34	J. Adams	8260/SA05-77	4459

Sample Extraction Data

	Wt/Vol					
Parameter	Extracted	Extract Vol	Date	Time	Analyst	Method
	AND THE WAY HAVE AND AND AND AND AND					
V-1-+:3- 0	- 7.00	F 0 1	0.115.705	11 50		5005
Volatile Organic	s 3.88 g	5.0 ml	2/15/05	11:50	N. Noman	5035
BTX Prep	3.99 q	5.0 ml	2/18/05	13:22	A. Cobbs	5035



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### ANALYTICAL REPORT

Laboratory Number: 05-A22048

Sample ID: MW-6-10

Project: Page 2

Surrogate	% Recovery	Target Range
UST surr-Trifluorotoluene	89.	63. ~ 127.
VOA Surr, 1,2-DCAd4	93,	72. ~ 134.
VOA Surr Toluene-d8	99.	76 122.
VOA Surr, 4-BFB	101.	60 138.
VOA Surr, DBFM	97.	75 137.

### LABORATORY COMMENTS:

ND = Not detected at the limit of detection

B = Analyte was detected in the method blank.

J = Estimated Value below Report Limit.

E = Estimated Value above the calibration limit of the instrument.

# = Recovery outside Laboratory historical or method prescribed limits.

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### ANALYTICAL REPORT

HOLGUIN, FAHAN & ASSOCIATES 10166 JAMES ANDERSON

143 SOUTH FIGUEROA STREET VENTURA, CA 93001

Project:

Project Name: EXXONMOBIL 18-MFO

Sampler: TOM SHOOK

Lab Number: 05-A22049 Sample ID: MW-6-15 Sample Type: Soil Site ID: 18-MFO

Date Collected: 2/15/05 Time Collected: 11:55 Date Received: 2/17/05 Time Received: 7:55

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
						~ · · ·			
*GENERAL CHEMISTRY PARAME	TERS*								
% Dry Weight	78.2	ક		1.0	2/23/05	15:39	Fitzwater	CLP	1488
*ORGANIC PARAMETERS*									
**TPH (Gasoline Range)	ND	mg/kg	4.24	50.0	2/19/05	11:09	A. Cobbs	8015B	2590
*VOLATILE ORGANICS*									
**Ethyl-t-butylether	ND	mg/kg	0.0017	1.0	2/23/05	21:53	J. Adams	8260B	4459
**tert-methyl amyl ether	ND	mg/Kg	0.0017	1.0	2/23/05	21:53	J. Adams	8260B	4459
**Tertiary butyl alcohol	ND	mg/kg	0.0435	1.0	2/23/05	21:53	J. Adams	8260B	4459
**Benzene	ND	mg/kg	0.0017	1.0	2/23/05	21:53	J. Adams	8260B	4459
**Ethylbenzene	ND	mg/kg	0.0017	1.0	2/23/05	21:53	J. Adams	8260B	4459
**Toluene	0.0019	mg/kg	0.0017	1.0	2/23/05	21:53	J. Adams	8260B	4459
**Xylenes (Total)	ND	mg/kg	0.0017	1.0	2/23/05	21:53	J. Adams	8260B	4459
**Methyl-t-butyl ether	0.0027	mg/kg	0.0017	1.0	2/23/05	21:53	J. Adams	8260B	4459
Ethanol	ND	mg/kg	0.174	1.0	2/23/05	21:53	J. Adams	8260B	4459
**Diisopropyl ether	ND	mg/kg	0.0017	1.0	2/23/05	21:53	J. Adams	8260/SA05-77	4459

Sample Extraction Data

	Wt/Vol					
Parameter	Extracted	Extract Vol	Date	Time	Analyst	Method
Volatile Organics	5.75 g	5.0 ml	2/15/05	11:55	N. Noman	5035
BTX Prep	5.90 g	5.0 ml	2/18/05	13:23	A. Cobbs	5035



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### ANALYTICAL REPORT

Laboratory Number: 05-A22049

Sample ID: MW-6-15

Project: Page 2

Surrogate	% Recovery	Target Range
UST surr-Trifluorotoluene	89.	63 127.
VOA Surr, 1,2-DCAd4	93.	72 134.
VOA Surr Toluene-d8	110.	76 122.
VOA Surr, 4-BFB	115.	60 138.
VOA Surr, DBFM	96.	75 137.

### LABORATORY COMMENTS:

ND = Not detected at the limit of detection

B = Analyte was detected in the method blank.

J = Estimated Value below Report Limit.

E = Estimated Value above the calibration limit of the instrument.

# = Recovery outside Laboratory historical or method prescribed limits.

\*\* = NELAC E87358 Certified Analyte

All results reported on a wet weight basis.



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### ANALYTICAL REPORT

HOLGUIN, FAHAN & ASSOCIATES 10166 JAMES ANDERSON 143 SOUTH FIGUEROA STREET

VENTURA, CA 93001

Project:

Project Name: EXXONMOBIL 18-MFO

Sampler: TOM SHOOK

Lab Number: 05-A22050 Sample ID: MW-6-20 Sample Type: Soil Site ID: 18-MFO

Date Collected: 2/15/05 Time Collected: 12:00 Date Received: 2/17/05 Time Received: 7:55

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
*GENERAL CHEMISTRY PARAME	TERS*								
% Dry Weight	72.0	*		1.0	2/23/05	15:39	Fitzwater	CLP	1488
*ORGANIC PARAMETERS*									
**TPH (Gasoline Range)	ND	mg/kg	4.19	50.0	2/19/05	11:41	A. Cobbs	8015B	2590
*VOLATILE ORGANICS*									
**Ethyl-t-butylether	ND	mg/kg	0.0019	1.0	2/23/05	22;13	J. Adams	8260B	4459
**tert-methyl amyl ether	ND	mg/Kg	0.0019	1.0	2/23/05	22:13	J. Adams	8260B	4459
**Tertiary butyl alcohol	ND	mg/kg	0.0470	1.0	2/23/05		J. Adams	8260B	4459
**Benzene	ND	mg/kg	0.0019	1.0	2/23/05	22:13	J. Adams	8260B	4459
**Ethylbenzene	ND	mg/kg	0.0019	1.0	2/23/05	22:13	J. Adams	8260B	4459
**Toluene	0.0023	mg/kg	0.0019	1.0	2/23/05	22:13	J. Adams	8260B	4459
**Xylenes (Total)	ND	mg/kg	0.0019	1.0	2/23/05	22:13	J. Adams	8260B	4459
**Methyl-t-butyl ether	0.0830	mg/kg	0.0019	1.0	2/23/05	22;13	J. Adams	8260B	4459
Ethanol	ND	mg/kg	0.188	1.0	2/23/05	22:13	J. Adams	8260B	4459
**Diisopropyl cther	ND	mg/kg	0.0019	1.0	2/23/05	22:13	J. Adams	8260/SA05-77	4459

Sample Extraction Data

	Wt/Vol					
Parameter	Extracted	Extract Vol	Date	Time	Analyst	Method
					<b>*</b>	
Volatile Organics	s 5.32 g	5.0 ml	2/15/05	12:00	N. Noman	5035
BTX Prep	5.97 g	5.0 ml	2/18/05	13:24	A. Cobbs	5035



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### ANALYTICAL REPORT

Laboratory Number: 05-A22050

Sample ID: MW-6-20

Project: Page 2

Surrogate	% Recovery	Target Range
UST surr-Trifluorotolucne		
VOA Surr, 1,2-DCAd4	90. 90.	63 127. 72 134.
VOA Surr Toluene-d8 VOA Surr, 4-BFB	104. 104.	76 122. 60 138.
VOA Surr, DBFM	93.	75 137.

### LABORATORY COMMENTS:

ND = Not detected at the limit of detection

B = Analyte was detected in the method blank.

J = Estimated Value below Report Limit.

E = Estimated Value above the calibration limit of the instrument.

# = Recovery outside Laboratory historical or method prescribed limits.

\*\* = NELAC E87358 Certified Analyte

All results reported on a wet weight basis.



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PROJECT QUALITY CONTROL DATA

Project Number:

Project Name: EXXONMOBIL 18-MFO

Page: 1

Laboratory Receipt Date: 2/17/05

### Matrix Spike Recovery

Note: If Blank is referenced as the sample spiked, insufficient volume was received for the defined analytical batch for MS/MSD analysis on an true sample matrix. Laboratory reagent water was used for QC purposes.

			_		Et Parpoor.			
Analyte	units	Orig. Val.	MS Val	Spike Conc	Recovery	Target Range	Q.C. Batch	Spike Sample
***************************************	~ · · ·	****			~			
**UST ANALYSIS**								
TPH (Gasoline Range)	mg/kg	< 15.3	51.5	50.0	103	52 150.	2590	05-A22047
**VOA PARAMETERS**								0.0 1122047
Benzene	mg/kg	< 0.0008	0.0630	0.0500	126	53 - 13	6 4459	blank
Toluene	mg/kg	< 0.0005	0.0576	0.0500	115	43 - 13		blank
VOA Surr, 1,2-DCAd4	% Rec				103	72 13		
VOA Surr Toluene-d8	% Rec				98	76 ~ 12		
VOA Surr, 4-BFB	% Rec				98	60 - 13		
VOA Surr, DBFM	% Rec				102	75 - 13		

### Matrix Spike Duplicate

Analyte	units	Orig. Val.	Duplicate	RPD	Limit	Q.C. Batch
**UST PARAMETERS**  TPH (Gasoline Range)  **VOA PARAMETERS**	mg/kg	51.5	50.7	1.57	39,	2590
Benzene	mg/kg	0.0630	0.0608	3.55	34.	4459
Toluene	mg/kg	0.0576	0.0576	0.00	39.	4459
VOA Surr, 1,2-DCAd4	% Rec		100.			4459
VOA Surr Toluene-d8	% Rec		101.			4459
VOA Surr, 4-BFB	% Rec		102.			4459
VOA Surr, DBFM	% Rec		90.			4459

### Laboratory Control Data

		~ ~				
Analyte	units	Known Val.	Analyzed Val	% Recovery	Target Range	Q.C. Batch



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PROJECT QUALITY CONTROL DATA

Project Number:

Project Name: EXXONMOBIL 18-MFO

Page: 2

Laboratory Receipt Date: 2/17/05

### Laboratory Control Data

Analyte	units	Known Val.	Analyzed Val	% Recovery	Target Range	Q.C. Batch
#						
**UST PARAMETERS**						
TPH (Gasoline Range)	mg/kg	10.0	8.96	90	74 - 127	2590
**VOA PARAMETERS**						
Ethyl-t-butylether	mg/kg	0.0500	0.0527	1.05	67 - 137	4459
tert-methyl amyl ether	mg/Kg	0.0500	0.0542	108	64 ~ 142	4459
Tertiary butyl alcohol	mg/kg	0.500	0.309	62	36 - 159	4459
Benzene	mg/kg	0.0500	0.0513	103	76 - 124	4459
Ethylbenzene	mg/kg	0.0500	0.0503	101	70 - 128	4459
Toluene	mg/kg	0.0500	0.0490	98	72 - 125	4459
Xylenes (Total)	mg/kg	0.150	0.146	97	71 - 129	4459
Methyl-t-butyl ether	mg/kg	0.0500	0.0479	96	67 - 138	4459
Ethanol	mg/kg	5.00	6.30	126	48 - 159	4459
Diisopropyl ether	mg/kg	0.0500	0.0500	100	70 - 131	4459
VOA Surr, 1,2-DCAd4	% Rec			94	72 - 134	4459
VOA Surr Toluene-d8	% Rec			101	76 - 122	4459
VOA Surr, 4-BFB	% Rec			100	60 - 138	4459
VOA Surr, DBFM	% Rec			97	75 - 137	4459

### Duplicates

		~					
Analyte	units	Orig. Val.	Duplicate	RPD	Limit	Q.C. Batch	Sample Dup'd

### Blank Data

Analyte	Blank Value	Units	Q.C. Batch	Date Analyzed	Time Analyzed
**UST PARAMETERS**					
TPH (Gasoline Range)	< 0.10	mg/kg	2590	2/19/05	8:32



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PROJECT QUALITY CONTROL DATA

Project Number:

Project Name: EXXONMOBIL 18-MFO

Page: 3

Laboratory Receipt Date: 2/17/05

UST surr-Trifluorotoluene	90.	% Recovery	2590	2/19/05	8:32
**VOA PARAMETERS**					
Ethyl-t-butylether	< 0.0007	mg/kg	4459	2/23/05	13:29
tert-methyl amyl ether	< 0.0008	mg/Kg	4459	2/23/05	13:29
Tertiary butyl alcohol	< 0.0114	mg/kg	4459	2/23/05	13:29
Benzene	< 0.0008	mg/kg	4459	2/23/05	13:29
Ethylbenzene	< 0.0005	mg/kg	4459	2/23/05	13:29
Toluene	< 0.0005	mg/kg	4459	2/23/05	13:29
Xylenes (Total)	< 0.0013	mg/kg	4459	2/23/05	13:29
Methyl-t-butyl ether	< 0.0009	mg/kg	4459	2/23/05	13:29
Ethanol	< 0.151	mg/kg	4459	2/23/05	13:29
Diisopropyl ether	< 0.0008	mg/kg	4459	2/23/05	13:29
VOA Surr, 1,2-DCAd4	102.	% Rec	4459	2/23/05	13:29
VOA Surr Toluene-d8	99.	% Rec	4459	2/23/05	13:29
VOA Surr, 4-BFB	104.	% Rec	4459	2/23/05	13:29
VOA Surr, DBFM	101.	% Rec	4459	2/23/05	13:29
****					

<sup># =</sup> Value outside Laboratory historical or method prescribed QC limits.



## **COOLER RECEIPT FORM**

BC#



Client Name : HFA, INC.

Cooler Received/Opened On: 2/17/05 Accessioned By: James D. Jacobs	
A Carola	-
Log-in Personnel Signature	
1. Temperature of Cooler when triaged: 3.2 Degrees Celsius	
2. Were custody seals on outside of cooler?	NA
a. If yes, how many and where: 2 Font	
3. Were custody seals on containers?	A
4. Were the seals intact, signed, and dated correctly?	
5. Were custody papers inside cooler?	ΙA
6. Were custody papers properly filled out (ink, signed, etc)?	l <b>A</b>
7. Did you sign the custody papers in the appropriate place?	A
8. What kind of packing material used? Bubblewrap Peanuts Vermiculite Other No.	ne
9. Cooling process: Ice-pack Ice (direct contact) Dry ice Other No	ne
10. Did all containers arrive in good condition (unbroken)?	A
11. Were all container labels complete (#, date, signed, pres., etc)?	A
12. Did all container labels and tags agree with custody papers?	4
13. Were correct containers used for the analysis requested?	4
14. a. Were VOA vials received?	4
b. Was there any observable head space present in any VOA vial?	P
15. Was sufficient amount of sample sent in each container?	
16. Were correct preservatives used?	4
If not, record standard ID of preservative used here	_
17. Was residual chlorine present?	
18. Indicate the Airbill Tracking Number (last 4 digits for Fedex only) and Name of Courier below:	
<u>2621</u>	
Fed-Ex UPS Velocity DHL Route Off-street Misc.	
19. If a Non-Conformance exists, see attached or comments below:	

# Test/America

2960 Foster Creighton Nashville, TN 37204 Nashville Division

Phone: 615-726-0177 Toll Free: 800-765-0980

**E**XonMobil.

Site Address 15757 Paramount Anderson Invoice To: (ExxonMobil PM unless otherwise indicate) PO#: 4505 824099 City, State, Zip Paramount Facility ID # 18-MFO Report To: James Account #: 10 166 Fax No.: (805)-652-0793 Fax: 615-726-3404 + Assoc 9200 CANNON Fahan 100K -02/2 Consultant Name: Holguin ExxonMobil Project Mgr: ノCn くと **ルタ/** Sampler Signature: City/State/Zip: Ven Telephone Number (8%) Address: 143 Sampler Name: (Print)\_\_ 406572

Matrix	H <sub>2</sub> SO <sub>4</sub> Glass (Yellow Label) H <sub>2</sub> SO <sub>4</sub> Glass (Yellow Label) Other (Specify) Groundwater Groundwater Soil Other (specify): SOIS SOIS SOIS TAT TAT (Pre-Schedule)	×	9/10000 Y	X X X	No.	6	× × × ×		Laboratory Comments:	sceipt: 3.2°C	Sample Containers Intact? N NOOS Frae of Headenage? V N		1000 100 100 100 100 100 100 100 100 10
Preservative	H2SO4 Glass (Yellow Label)	×	7	~	×	*	×					Received by:	\ \ !
	Date Sampled Time Sampled No. of Containers Shipped	2-15-4 8:30 7	2-15-05-8:35-7	1 Oh.8 60312	who 4.50 7	2-15-54 11:55 7	15.215.00 1					Date Time 2-/6-05 /5:5	
	Sample ID / Description	MW-5-10	MW-5-15	MW-5-20	MW-6-10	MW-6-15	AW-6-20		Special Instructions:			Son Alex	



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2/24/05

### HOLGUIN, FAHAN & ASSOCIATES 10166 JAMES ANDERSON 143 SOUTH FIGUEROA STREET VENTURA, CA 93001

This report includes the analytical certificates of analysis for all samples listed below. These samples relate to your project identified below:

Project Name: EXXONMOBIL 18-MFO

Project Number: .

Laboratory Project Number: 406574.

An executed copy of the chain of custody, the project quality control data, and the sample receipt form are also included as an addendum to this report. Any QC recoveries outside laboratory control limits are flagged individually with an #. Sample specific comments and quality control statements are included in the Laboratory notes section of the analytical report for each sample report. If you have any questions relating to this analytical report, please contact your Laboratory Project Manager at 1-800-765-0980. Any opinions, if expressed, are outside the scope of the Laboratory's accreditation.

Sample Identification	Lab Number	Page 1 Collection Date
	هما خلف الله هلك على عبد حقي بها فلنه	
MW-7-10	05-A22056	2/16/05
MW-7-15	05-A22057	2/16/05
MW - 7 - 20	05-A22058	2/16/05



#### 2960 FOSTEK CREIGHTON DRIVE • NASHVILLE, TENNESSEE 37204 800-765-0980 • 615-726-3404 FAA

Sample Identification

Lab Number

Page 2 Collection Date

These results relate only to the items tested. This report shall not be reproduced except in full and with permission of the laboratory.

ROXANNEZ Connor

Report Approved By:

Report Date: 2/24/05

Johnny A. Mitchell, Laboratory Director Michael H. Dunn, M.S., Technical Director Pamela A. Langford, Senior Project Manager Eric S. Smith, QA/QC Director Sandra McMillin, Technical Services Gail A. Lage, Senior Project Manager Glenn L. Norton, Technical Services Kelly S. Comstock, Technical Services Roxanne L. Connor, Senior Project Manage Mark Hollingsworth, Director of Project

Laboratory Certification Number: 01168CA

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# ANALYTICAL REPORT

HOLGUIN, FAHAN & ASSOCIATES 10166

JAMES ANDERSON

143 SOUTH FIGUEROA STREET

VENTURA, CA 93001

Project:

Project Name: EXXONMOBIL 18-MFO

Sampler: TOM SHOOK

Lab Number: 05-A22056 Sample ID: MW-7-10 Sample Type: Soil Site ID: 18-MFO

Date Collected: 2/16/05 Time Collected: 8:35 Date Received: 2/17/05 Time Received: 7:55

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
									VM WA AL AN AN
*GENERAL CHEMISTRY PARAME	TERS*								
% Dry Weight	79.1	*		1.0	2/23/05	15:39	Fitzwater	CLP	1488
*ORGANIC PARAMETERS*									
**TPH (Gasoline Range)	ND	mg/kg	5.69	50.0	2/19/05	12:12	A. Cobbs	8015B	2590
*VOLATILE ORGANICS*									
**Ethyl-t-butylether	ND	mg/kg	0.0023	1.0	2/23/05	22:32	J. Adams	8260B	4459
**tert-methyl amyl ether	ND.	mg/Kg	0.0023	1.0	2/23/05	22:32	J. Adams	8260B	4459
**Tertiary butyl alcohol	ND	mg/kg	0.0563	1.0	2/23/05	22:32	J. Adams	8260B	4459
**Benzene	ND	mg/kg	0.0023	1.0	2/23/05	22:32	J. Adams	8260B	4459
**Ethylbenzene	ND	mg/kg	0.0023	1.0	2/23/05	22:32	J. Adams	8260B	4459
**Toluene	ND	mg/kg	0.0023	1.0	2/23/05	22:32	J. Adams	8260B	4459
**Xylenes (Total)	ND	mg/kg	0.0023	1.0	2/23/05	22:32	J. Adams	8260B	4459
**Methyl-t-butyl ether	ND	mg/kg	0.0023	1.0	2/23/05	22:32	J. Adams	8260B	4459
Ethanol	ND	mg/kg	0.225	1.0	2/23/05	22:32	J. Adams	8260B	4459
**Diisopropyl ether	ND	mg/kg	0.0023	1.0	2/23/05	22:32	J. Adams	8260/SA05-77	4459

Sample Extraction Data

	Wt/Vol					
Parameter	Extracted	Extract Vol	Date	Time	Analyst	Method
<b></b>			also dels state des del del dels	W MA AND		
Volatile Organic	s 4.44 g	5.0 ml	2/15/05	8:35	N. Noman	5035
BTX Prep	4.39 g	5.0 ml	2/18/05	13:25	A. Cobbs	5035



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# ANALYTICAL REPORT

Laboratory Number: 05-A22056

Sample ID: MW-7-10

Project: Page 2

Surrogate	% Recovery	Target Range		
UST surr-Trifluorotoluene	89.	63 127.		
VOA Surr, 1,2-DCAd4	94.	72 134.		
VOA Surr Toluene-d8	103.	76 122.		
VOA Surr, 4-BFB	104.	60 138.		
VOA Surr. DBFM	97.	75 137.		

#### LABORATORY COMMENTS:

ND = Not detected at the limit of detection

B = Analyte was detected in the method blank.

J = Estimated Value below Report Limit.

E = Estimated Value above the calibration limit of the instrument.

# = Recovery outside Laboratory historical or method prescribed limits.

\*\* = NELAC E87358 Certified Analyte

All results reported on a wet weight basis.



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# ANALYTICAL REPORT

HOLGUIN, FAHAN & ASSOCIATES 10166 JAMES ANDERSON

143 SOUTH FIGUEROA STREET

VENTURA, CA 93001

Project:

Project Name: EXXONMOBIL 18-MFO

Sampler: TOM SHOOK

Lab Number: 05-A22057 Sample ID: MW-7-15 Sample Type: Soil Site ID: 18-MFO

Date Collected: 2/16/05 Time Collected: 8:40 Date Received: 2/17/05 Time Received: 7:55

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
*GENERAL CHEMISTRY PARAME* % Dry Weight	TERS*	ş		1.0	2/23/05	15:39	Fitzwater	CLP	1488
*ORGANIC PARAMETERS*  **TPH (Gasoline Range)	ND	mg/kg	4.98	50.0	2/19/05	12:44	A. Cobbs	8015B	2590
*VOLATILE ORGANICS*									
**Ethyl-t-butylether	ND	mg/kg	0.0017	1.0	2/23/05	22:52	J. Adams	8260B	4459
**tert-methyl amyl ether	ND	mg/Kg	0.0017	1.0	2/23/05	22:52	J. Adams	8260B	4459
**Tertiary butyl alcohol	ND	mg/kg	0.0437	1.0	2/23/05	22:52	J. Adams	8260B	4459
**Benzene	0.0009 J	mg/kg	0.0017	1.0	2/23/05	22:52	J. Adams	8260B	4459
**Ethylbenzene	ND	mg/kg	0.0017	1.0	2/23/05	22:52	J. Adams	8260B	4459
**Toluene	0.0023	mg/kg	0.0017	1.0	2/23/05	22:52	J. Adams	8260B	4459
**Xylenes (Total)	ND	mg/kg	0.0017	1.0	2/23/05	22:52	J. Adams	8260B	4459
**Methyl-t-butyl ether	ND	mg/kg	0.0017	1.0	2/23/05	22:52	J. Adams	8260B	4459
Ethanol	ND	mg/kg	0.175	1.0	2/23/05	22:52	J. Adams	8260B	4459
**Diisopropyl ether	ND	mg/kg	0.0017	1.0	2/23/05	22:52	J. Adams	8260/SA05-77	4459

Sample Extraction Data

	Wt/Vol					
Parameter	Extracted	Extract Vol	Date	Time	Analyst	Method
Volatile Organic	s 5.72 g	5.0 ml	2/15/05	8:40	N. Noman	5035
BTX Prep	5.02 g		2/18/05	13:26	A. Cobbs	5035



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# ANALYTICAL REPORT

Laboratory Number: 05-A22057 Sample ID: MW-7-15

Project: Page 2

Surrogate	% Recovery	Target Range
UST surr-Trifluorotoluene	89.	63 127.
VOA Surr, 1,2-DCAd4	94.	72 134.
VOA Surr Toluene-d8	114.	76 122.
VOA Surr, 4-BFB	127.	60 138.
VOA Surr. DBFM	95.	75 137.

# LABORATORY COMMENTS:

ND = Not detected at the limit of detection

B = Analyte was detected in the method blank.

J = Estimated Value below Report Limit.

 ${\tt E}$  = Estimated Value above the calibration limit of the instrument.

# = Recovery outside Laboratory historical or method prescribed limits.

\*\* = NELAC E87358 Certified Analyte

All results reported on a wet weight basis.



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#### ANALYTICAL REPORT

HOLGUIN, FAHAN & ASSOCIATES 10166

JAMES ANDERSON

143 SOUTH FIGUEROA STREET

VENTURA, CA 93001

Project:

Project Name: EXXONMOBIL 18-MFO

Sampler: TOM SHOOK

Lab Number: 05-A22058 Sample ID: MW-7-20 Sample Type: Soil Site ID: 18-MFO

Date Collected: 2/16/05 Time Collected: 8:50 Date Received: 2/17/05 Time Received: 7:55

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
*GENERAL CHEMISTRY PARAME	TERS*								
% Dry Weight	76.6	<del>%</del>		1.0	2/23/05	15:39	Fitzwater	CLP	1488
*ORGANIC PARAMETERS*									
**TPH (Gasoline Range)	ND	mg/kg	4.24	50.0	2/19/05	13:15	A. Cobbs	8015B	2590
*VOLATILE ORGANICS*									
**Ethyl-t-butylether	ND	mg/kg	0.0016	1.0	2/23/05	23:11	J. Adams	8260B	4459
**tert-methyl amyl ether	ND	mg/Kg	0.0016	1.0	2/23/05	23:11	J. Adams	8260B	4459
**Tertiary butyl alcohol	ND	mg/kg	0.0412	1.0	2/23/05	23:11	J. Adams	8260B	4459
**Benzene	ND	mg/kg	0.0016	1.0	2/23/05	23:11	J. Adams	8260B	4459
**Ethylbenzenc	ND	mg/kg	0.0016	1.0	2/23/05	23:11	J. Adams	8260B	4459
**Toluene	0.001 <b>4</b> J	mg/kg	0.0016	1.0	2/23/05	23:11	J. Adams	8260B	4459
**Xylenes (Total)	ND	mg/kg	0.0016	1.0	2/23/05	23:11	J. Adams	8260B	4459
**Methyl-t-butyl ether	ND	mg/kg	0.0016	1.0	2/23/05	23:11	J. Adams	8260B	4459
Ethanol	ND	mg/kg	0.165	1.0	2/23/05	23:11	J. Adams	8260B	4459
**Diisopropyl ether	ND	mg/kg	0.0016	1.0	2/23/05	23:11	J. Adams	8260/SA05-77	4459

Sample Extraction Data

	Wt/Vol					
Parameter	Extracted	Extract Vol	Date	Time	Analyst	Method
Volatile Organic	s 6.07 g	5.0 ml	2/15/05	8:50	N. Noman	5035
BTX Prep	5.90 g	5.0 ml	2/18/05	13:27	A. Cobbs	5035



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#### ANALYTICAL REPORT

Laboratory Number: 05-A22058

Sample ID: MW-7-20

Project: Page 2

Surrogate	% Recovery	Target Range		
UST surr-Trifluorotoluene	90.	63 127.		
VOA Surr, 1,2-DCAd4	96.	72 134.		
VOA Surr Toluene-d8	100.	76 122.		
VOA Surr, 4-BFB	102.	60 138.		
VOA Surr, DBFM	95 <i>.</i>	75 137.		

#### LABORATORY COMMENTS:

ND = Not detected at the limit of detection

B = Analyte was detected in the method blank.

J = Estimated Value below Report Limit.

E = Estimated Value above the calibration limit of the instrument.

# = Recovery outside Laboratory historical or method prescribed limits.

\*\* = NELAC E87358 Certified Analyte

All results reported on a wet weight basis.



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PROJECT QUALITY CONTROL DATA

Project Number:

Project Name: EXXONMOBIL 18-MFO

Page: 1

Laboratory Receipt Date: 2/17/05

#### Matrix Spike Recovery

Note: If Blank is referenced as the sample spiked, insufficient volume was received for the defined analytical batch for MS/MSD analysis on an true sample matrix. Laboratory reagent water was used for QC purposes.

units	Orig, Val.	MS Val	Spike Conc	Recovery	Target Range	Q.C. Batch Spike Sample
mg/kg	< 15.3	51.5	50.0	103	52 150.	2590 05-A22047
mg/kg	< 0.0008	0.0630	0.0500	126	53 - 136	5 4459 blank
mg/kg	< 0.0005	0.0576	0.0500	115	43 - 139	9 4459 blank
% Rec				103	72 - 134	4459
% Rec				98	76 - 122	2 4459
% Rec				98	60 - 138	3 4459
% Rec				102	75 ~ 137	7 4459
	mg/kg mg/kg mg/kg % Rec % Rec	mg/kg < 15.3  mg/kg < 0.0008  mg/kg < 0.0005  % Rec % Rec % Rec	mg/kg < 15.3 51.5  mg/kg < 0.0008 0.0630  mg/kg < 0.0005 0.0576  % Rec % Rec % Rec	mg/kg < 15.3 51.5 50.0  mg/kg < 0.0008 0.0630 0.0500  mg/kg < 0.0005 0.0576 0.0500  % Rec % Rec % Rec	mg/kg < 15.3 51.5 50.0 103  mg/kg < 0.0008 0.0630 0.0500 126  mg/kg < 0.0005 0.0576 0.0500 115  % Rec 103  % Rec 98  % Rec 98	mg/kg < 15.3 51.5 50.0 103 52 150.  mg/kg < 0.0008 0.0630 0.0500 126 53 - 136  mg/kg < 0.0005 0.0576 0.0500 115 43 - 139  % Rec 103 72 - 136  % Rec 98 76 - 122  % Rec 98 60 - 138

#### Matrix Spike Duplicate

Analyte	units	Orig. Val.	Duplicate	RPD	Limit	Q.C. Batch
77 776 NO 144					~	
**UST PARAMETERS**						
TPH (Gasoline Range)	mg/kg	51.5	50.7	1.57	39.	2590
**VOA PARAMETERS**						
Benzene	mg/kg	0.0630	0.0608	3.55	34.	4459
Toluene	mg/kg	0.0576	0.0576	0.00	39.	4459
VOA Surr, 1,2-DCAd4	% Rec		100.			4459
VOA Surr Toluene-d8	% Rec		101.			4459
VOA Surr, 4-BFB	% Rec		102.			4459
VOA Surr, DBFM	% Rec		90.			4459

#### Laboratory Control Data

	··· ·· ·· · · · · · · · · · · · · · ·					
Analyte	units	Known Val.	Analyzed Val	% Recovery	Target Range	Q.C. Batch



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PROJECT QUALITY CONTROL DATA

Project Number:

Project Name: EXXONMOBIL 18-MFO

Page: 2

Laboratory Receipt Date: 2/17/05

#### Laboratory Control Data

Analyte	units	Known Val.	Analyzed Val	% Recovery	Target Range	Q.C. Batch
	AND THE REAL PROPERTY.		w			
**UST PARAMETERS**						
TPH (Gasoline Range)	mg/kg	10.0	8.96	90	74 - 127	2590
**VOA PARAMETERS**						
Ethyl-t-butylether	mg/kg	0.0500	0.0527	105	67 - 137	4459
tert-methyl amyl ether	mg/Kg	0.0500	0.0542	108	64 - 142	4459
Tertiary butyl alcohol	mg/kg	0.500	0.309	62	36 - 159	4459
Benzene	mg/kg	0.0500	0.0513	103	76 - 124	4459
Ethylbenzene	mg/kg	0.0500	0.0503	101	70 - 128	4459
Toluene	mg/kg	0.0500	0.0490	98	72 - 125	4459
Xylenes (Total)	mg/kg	0.150	0.146	97	71 - 129	4459
Methyl-t-butyl ether	mg/kg	0.0500	0.0479	96	67 ~ 138	4459
Ethanol	mg/kg	5.00	6.30	126	48 - 159	4459
Diisopropyl ether	mg/kg	0.0500	0.0500	100	70 - 131	4459
VOA Surr, 1,2-DCAd4	% Rec			94	72 - 134	4459
VOA Surr Toluene-d8	% Rec			101	76 - 122	4459
VOA Surr, 4-BFB	% Rec			100	60 - 138	4459
VOA Surr, DBFM	% Rec			97	75 ~ 137	4459

# Duplicates

Analyte	units	Orig. Val.	Duplicate	RPD	Limit	Q.C. Batch	Sample Dup'd

# Blank Data

Analyte	Blank Value	Units	Q.C. Batch	Date Analyzed	Time Analyzed
	~ w ~ ~ ~ ~ ~				
**UST PARAMETERS**					
TPH (Gasoline Range)	< 0.10	mg/kg	2590	2/19/05	8:32



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PROJECT QUALITY CONTROL DATA

Project Number:

Project Name: EXXONMOBIL 18-MFO

Page: 3

Laboratory Receipt Date: 2/17/05

UST surr-Trifluorotoluene	90.	% Recovery	2590	2/19/05	8:32
**VOA PARAMETERS**					
Ethyl-t-butylether	< 0.0007	mg/kg	4459	2/23/05	13:29
tert-methyl amyl ether	< 0.0008	mg/Kg	4459	2/23/05	13:29
Tertiary butyl alcohol	< 0.0114	mg/kg	4459	2/23/05	13:29
Benzene	< 0.0008	mg/kg	4459	2/23/05	13:29
Ethylbenzene	< 0.0005	mg/kg	4459	2/23/05	13:29
Toluene	< 0.0005	mg/kg	4459	2/23/05	13:29
Xylenes (Total)	< 0.0013	mg/kg	4459	2/23/05	13:29
Methyl-t-butyl ether	< 0.0009	mg/kg	4459	2/23/05	13:29
Ethanol	< 0.151	mg/kg	4459	2/23/05	13:29
Diisopropyl ether	< 0.0008	mg/kg	4459	2/23/05	13:29
VOA Surr, 1,2-DCAd4	102.	% Rec	4459	2/23/05	13:29
VOA Surr Toluene-d8	99.	% Rec	4459	2/23/05	13:29
VOA Surr, 4-BFB	104.	% Rec	4459	2/23/05	13:29
VOA Surr. DBFM	101.	% Rec	4459	2/23/05	13:29

<sup># =</sup> Value outside Laboratory historical or method prescribed QC limits.



# **COOLER RECEIPT FORM**

BC#



Client Name : HFA, INC.

Co	poler Received/Opened On: 2/17/05 Accessioned By: James D	). Jacobs
	O O O O O O O O O O O O O O O O O O O	2
	Log-in Personnel Sig	nature
1.	Temperature of Cooler when triaged: 3,2 Degrees Celsius	
2.	Were custody seals on outside of cooler?	YESNONA
	a. If yes, how many and where:	
3.	Were custody seals on containers?	NOYESNA
4.	Were the seals intact, signed, and dated correctly?	YESNONA
5.	Were custody papers inside cooler?	YESNONA
6.	Were custody papers properly filled out (ink, signed, etc)?	YE\$NONA
7.	Did you sign the custody papers in the appropriate place?	(YES)NONA
8.	What kind of packing material used? Bubblewrap Peanuts Vermiculite	Other None
9.	Cooling process: Ice-pack Ice (direct contact) Dry ice	Other None
10.	Did all containers arrive in good condition ( unbroken)?	YEŞNONA
11.	Were all container labels complete (#, date, signed, pres., etc)?	YES)NONA
12.	Did all container labels and tags agree with custody papers?	YESNONA
13.	Were correct containers used for the analysis requested?	YESNONA
14.	a. Were VOA vials received?	VESNONA
	b. Was there any observable head space present in any VOA vial?	NO,YESNA
15.	. Was sufficient amount of sample sent in each container?	YESNONA
16.	Were correct preservatives used?	YESNONA
	If not, record standard ID of preservative used here	
17.	. Was residual chlorine present?	NOYES.(.NA
18.	. Indicate the Airbill Tracking Number (last 4 digits for Fedex only) and Name of Courier	r below:
	<u>2621</u>	
	Fed-Ex UPS Velocity DHL Route Off-street	Misc.
19	. If a Non-Conformance exists, see attached or comments below:	

# Test/America

2960 Foster Creighton Nashville, TN 37204 Nashville Division

Toll Free: 800-765-0980 Fax: 615-726-3404 Phone: 615-726-0177

**E**XonMobil.

Invoice To: (ExxonMobil PM unless otherwise indicate) Report Tomes Anderson Site Address 15757 Paramount PO#: 450824049 City, State, Zip Paymen 2 Nort Facility ID # 18-11FO Account #: 10 166 Fax No. (805) (52-0743 Consultant Name: Holy 48h, Fahan & Assoc Inc. ζ onMobil Project Mgr: Urner Briggs
Telephone Number: (05)652-011 - SALETOL Shook City/State/Zip: Kutra ExxonMobil Project Mgr: Urner Sampler Name: (Print) Sampler Signature: Address: 143 406574

Regulatory District (CA)

				+	-	$\dashv$	╁	Preservative	tat Tat	φ	Y		-	Matrix		٦				₹	naly.	Analyze For:	.io			!				
Sample ID / Description	Date Sampled	Time Sampled	No. of Containers Shipped Grab	Composite	Field Filtered	90	HNO3 (Red Label) HCI (Blue Label)	NaOH (Orange Label)	H2SO4 Plastic (Yellow Label)	H <sub>2</sub> SO <sub>4</sub> Glass (Yellow Label)	Other (Specify)	Groundwater	Wastewater Prinking Motor	Drinking Water Sludge	llos	Other (specify):	HOL SIOS	TELVERTIN 6258	7 84442								(Sinberio2-erq) TAT HSUR	TAT request (in Bus. Days)	TAT GTS	ax Results
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# APPENDIX 6.

WELL INSTALLATION PERMIT

WA	ELL PERMIT A TER & SEWAGE / M 50 COMMERCE DRIV	OUNTAIN & RURAL PROGRAMS - ENVI /E. BALDWIN PARK, ČA 91706 (626) 430-	RONMENTA	JCTION WELLS L HEALTH DIVISION 26) 813-3016	DATE: 2-4-05
	NEW WELL C	ONSTRUCTION CTION OR RENOVATION	X MC CA	ONITORING ATHODIC JECTION TRACTION	HEAT EXCHANGE OTHER ( Specify) :
ATION	SITE ADDRESS	5757 PARAMOUNT Blvd	CITY	ARAMOUNT	ZIP CODE
WELL LOCATION	Township	Range	<del></del>	Section	Map Book Page/ Grid
	Type and Size of	N EACH PARCEL:		Affach site map with we	
HHE	Production Casing	4" SCHEDURE 40 PVC		Company	Holgwin, Fahan + Associates Jeff NobrigA
WELL STRUCTURE	Sanitary / Annular Sealing Material	15		Contact Person	Jeff Nobriga 143 S. Figuerua  143 S. Figuerua  143 S. Figuerua
11.51	Type and Size of Production Casing  Sunitary / Annular Scaling Material  Depth of Sanitary / Annular Scal  Let See Affactor See Affacto			Address	143 Sifiguerua
WE				City, State Zip	VENTAGE, OIL 13001
	Conductor Casing Seal		ĺ	Telephone	(805) 766-8427
	Well Owner	Exxonmobil DI Corporation	) <sub>N</sub>	FOUND TO DIFFER	OGIC CONDITIONS ENCOUNTERED IN THE FIELD ARE FROM THE SCOPE OF WORK PRESENTED TO THIS OFFICE, FICATIONS MAY BE REQUIRED
OWNER / DRILLER INFORMATION	Address	3700 W. 190 th Street			
ORM	City / Zip Code	TORRANCE, CA		THIS PERMIT IS CO	SPOSITION OF PERMIT ( Department Use Only) NSIDERED COMPLETE WHEN THE WORK PLAN IS
ER IN	Telephone			CONSTRUCTION OR	IEN THE WELL COMPLETION LOG IS RECEIVED. NO WELL DECOMMISSIONING CAN BE INITIATED WITHOUT THE IVAL FROM THIS DEPARTMENT.
III L	Weil Driller	CASCAGE BRIUNG		WORK TEAN APPRO	~ 97.WF 7
ER/D	Address	11250 E.FIRESTONE BUYD			WORK PLAN APPROVAL This Approval is Valid for 180 Days
NAO	City / Zip Code	NORWALK, CA		Page 17-05	REHS LANGE TO THE PROPERTY OF
	C-57 License No.	C57-717510		Conditions	The sugar
	Telephone	(562)929-8176		Maint	in the required set pack
	Well Depth log / records			1 /7 //	enur and water lines
NINC	Method of Weil Assessment			The same of the sa	
	Depth and Number of Perforations				
T DECO	Type of Perforator Size of Perforations				
	Type and Amount of Scalant				
	dethod of Upper Seal ressure Application				
Count the Co constr welt as Health	y Environmental Hea unty of Los Angeles : uction, reconstruction ad within thirty days I office with a comple	every respect with all the regulations of the all the Division and with all ordinances and land the State of California pertaining to we and decommissioning. Upon completion of thereafter, I will furnish the Environmentation log of the well giving date drilled, dept	ws of Al f the J		FINAL INSPECTION
ve⊪, p	erforations in the cas y Environmental Hea	ing, and any other data deemed necessary t	by	Date F	KEHS
		ON behalf of Exon Mabit Applicant's Signature		The well log must be su	PERMIT ISSUED bmitted to this Department prior to issuance of the final approval
applica elepho	nt Name: (PRINT)	• *************************************		Date R	LEHS
668-A	т.				



# APPENDIX 7.

WASTE MANIFESTS...PENDING